

THE

SOUTHERN PLANTER.

Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts.—
Xenophon.

Tillage and Pasturage are the two breasts of the
State.—*Sully.*

FRANK: G. RUFFIN, EDITOR AND PROPRIETOR.

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GREAT FRAUD IN GUANO.

[We do not know to whom allusion is made in the following article which the Boston Cultivator copies from the Country Gentleman, but we *think we do*. It is proper though to warn people here in Virginia, especially, where our inspection laws are not worth a cent.—ED. PLANT.]

It is common to declaim against the caution of farmers in regard to the adoption of new things. If, as will not be denied, they have practiced an undue conservatism, it will be found on inquiry to be, in many instances, only the natural result of influences to which they have been subjected. They have so frequently been led astray by the false guides, that like the savage who became the victim of misplaced confidence, they are ready to ask—"How shall we know whom to believe, having been so deceived?" The disposition to improve which has been manifest among a portion of the rural population, has opened the way for the practice of empiricism and deception on a large scale, and the reaction which is the result constitutes a serious obstacle to the spread of truth. Thus the false friends of agriculture are in reality its worst enemies.

The following article from the *Country Gentleman* exposes one of the ways by which base men aggrandize themselves at the expense of honest farmers. The parties engaged in this new system of rascality are no "green hands," as many persons already too well know.—EDS.

"Every one acquainted with the guano trade of Great Britain is aware that adulteration is carried on to an enormous extent. The laws are stringent, and the penalties in case of detection severe, yet the profits are so large and the difficulty of *proving* the fraud so great, that numbers of dishonest men are willing to brave the chances of detection. The agricultural press, when in the hands of honest, independent men, untrammelled by business con-

nections, is the great safe-guard against these and other impositions; but, though the British agricultural journals are mostly of a high tone and character, their price prevents an extensive circulation; and, indeed, comparatively few farmers take any agricultural paper whatever. Under such circumstances, therefore, it is no wonder that fraudulent manure dealers reap a rich harvest.

We have long been convinced that there were parties in this country engaged in manufacturing various artificial fertilizers which are of little value—and we have done our part towards exposing their fraudulent practices. We were also aware that inferior guanos are often sold under an assurance that they are equal to the best Peruvian, but we had no idea that there was any one in this country engaged in the manufacture of guano. We are sorry to say we have been deceived. Numerous as are our agricultural papers, great as are their circulation and influence, they are found insufficient to prevent unscrupulous men from *attempting* to palm off on the credulous farmers of our broad domain a comparatively worthless article, at a high price, under a *false name*, and, what is most to be regretted, it is one of the professed friends and teachers of scientific agriculture that is engaged in this deception.

How we discovered the fraud, we are not at liberty to state. Suffice it to say, that some six weeks ago, we were informed that an article known as Mexican guano was taken to an establishment, near Newark, N. J., and there mixed with plaster, salt, sugar-house scum, Peruvian guano and quick-lime, the whole ground up together and put in bags, marked "*Chilian Guano*."

Following the direction of our informant, we proceeded to Newark, and there found a large heap, of about 250 tons of Mexican guano, and some 200 tons of the *manufactured article* in bags, marked "Chilian guano," as

we had been informed. We had also learned that a considerable quantity had already been shipped to New York and Boston, and one gentleman said he believed a good portion of it had been sent to England.

In New York we were offered the Chilean guano, if we would take it in quantity, at \$35 per ton.

We took samples of both the Mexican and Chilean guano, and made careful duplicate analyses of them in the laboratory of Prof. Carr, of this city, chemist to the New York State Agricultural Society. The following are the mean per centage results of the analyses:

Mexican Guano.

Sand, - - - - -	0.5
Organic matter, - - - - -	5.0
Phosphate of lime, - - - - -	26.0
Carbonate of lime, - - - - -	68.0
	<hr/>
	99.5

Chilian Guano.

Water, - - - - -	4.0
Sand, - - - - -	2.4
Organic matter, - - - - -	15.3
Phosphate of lime, - - - - -	24.5
Sulphate of lime, (plaster) - - - - -	9.5
Chloride of sodium, (salt) - - - - -	6.2
Carbonate of lime, (chalk) - - - - -	37.6
	<hr/>
	99.5
Ammonia, - - - - -	1.06

Having obtained these results, we proceeded once more to Newark, and there received the following account of the *modus operandi*, adopted in the factory:

The bags are first marked "Chilian Guano;" they are then moistened with water, and laid in a heap, in layers, *with a quantity of Peruvian guano between each layer.*

The sugar-house scum is pounded fine.—Three barrowfuls, of "five half-bushels" each, are then mixed with six barrowfuls of Mexican guano. To this are added $1\frac{1}{2}$ bushels common salt, 1 bushel plaster, 3 bushels Peruvian guano, and $\frac{1}{2}$ bushel of quick lime. When the Peruvian guano and lime are added, "they make it tremendously strong." In other words, the lime sets free the ammonia of the Peruvian guano, and gives the manufactured Chilean guano a strong smell of hartshorn, which, to the unreflecting, is a sure indication of a valuable guano.

The floor, where the bags were filled, was covered with Peruvian Guano, in order to make the article look as like genuine guano as possible.

What is Chilean guano, and why is this name given to it instead of the better known Peruvian guano? The only genuine Peruvian guano in this country comes through the

hands of Barreda Brothers, and has their mark upon it; so that it would not be easy to sell a spurious Peruvian guano. Chilean guano is subject to no such regulations, and the books describe it, when "fine,"—and the manufactured article is made fine by grinding—as a "very valuable variety, equal to that of the very best Peruvian." The name, therefore, has been chosen with consummate cunning.

The Oxford (Me.) Democrat states that it has received a circular containing an analysis of "Chilian guano," made by Prof. Hayes, "Assayer to the State of Massachusetts," and which is "Endorsed by Prof. Mapes." This analysis represents the Chilean guano as containing 27.9 per cent. of "azotized organic matter and fixed salts of ammonia." This is a much larger quantity than the sample we analyzed contained. The actual quantity of ammonia or nitrogen is not stated, and it is impossible to judge correctly of the value of the manure without it. Fermented saw-dust, or peat may be termed "azotized organic matter, with fixed salt of ammonia;" and we can see no use of such phraseology except to deceive.

Seeing it stated in the Southern Farmer, that Chilean guano was about to be tried on the Model Farm of the Union Agricultural Society, at Petersburg, Va., we wrote to the Superintendent, Mr. Nichol, for information in regard to it. He replied that it was obtained from Messrs. Rowlett & Harday, of Petersburg, who received it from Mr. S., of Boston. The price was \$40 per ton. Mr. T. S. Pleasants, the guano inspector at Petersburg, informs us, that having made a chemical examination of the Chilean guano, he told Messrs. R. & H. that "it was a fraud." On this, Messrs. R. & H. wrote to Mr. S., who replied that the opinion of Mr. Pleasants "was very different from other gentlemen, mentioning the names of Dr. Hayes, and the Inspector at Richmond, Dr. Powell."

We have now presented the facts in regard to this Chilean guano manufacture, so far as we have been able to obtain them. Our readers can draw their own inferences. Even were the article itself valuable, it would be a gross deception to palm it off as genuine guano; but the article is comparatively worthless, as our analysis fully proves. Thus a ton of it contains 490 lbs. insoluble phosphate of lime, which at two cents per pound—a high estimate—is \$9.80; 124 lbs. of salt, worth say \$1; 190 lbs. plaster, 50 cents, and 21 lbs. ammonia at 12 cents per pound, \$2.52. This is \$13.82 per ton. Allowing that non-azot-

ized organic matter and carbonate of lime is worth \$1.18, we have fifteen dollars as the outside value of a ton of the so-called "Chilian guano." And for this the farmers are asked \$40, and are told that it is better than Peruvian guano.

Since writing the above, we have received the May number of the American Farmer, containing the report of the Inspector of guano at Baltimore, Md. He says, "two lots, consisting of 100 bags each, were consigned from New York and Boston, *purporting to be 'Chilian guano,' and so marked.* An average sample of that from New York contained ammonia 1.78 per cent. That from Boston contained 2.56 per cent. ammonia, and 21.10 phosphate of lime." This is a little more ammonia than we found, and a little less phosphate of lime. The analyses show, however, that the article is comparatively worthless, even taking the highest figures."

THE CHILIAN GUANO FRAUD.

The American Farmer, published at Baltimore, Md., copies our article on the "Chilian Guano Fraud," and remarks:

"Two lots of 100 bags each, of guano purporting to be 'Chilian,' were consigned to this market from Boston and New York in April, as will be seen by reference to the Inspectors' report for that month, published in our paper. These lots came highly recommended, with a printed circular and analysis signed by Dr. Hayes, State Assayer of Massachusetts, and endorsed by Dr. Mapes, Prof. of Agricultural Chemistry, Newark, N. J. After speaking of its peculiar qualities, they say: 'In any application where Peruvian guano succeeds, this guano may take its place, as its ammonia compound is sufficient in quantity and condition to render it a powerful fertilizer.' In a letter subsequently written by the consignor from Boston to his agent here, after receiving the analysis of the Inspector here, (making it comparatively worthless,) he says the Inspector must be in error, as he is assured by Drs. Mapes and Hayes, that it is equal to the best Peruvian, and that it commands a high price in England. At the request of the Inspector, the consignee had an analysis made by Dr. Stewart, of this city—the result of which confirmed the analysis of the Inspector, and proved its commercial value to be, as estimated by him, but \$13 per ton, while it was held at \$40, and said to be equal to Peruvian. The result has been, that not one pound has been sold in this market, and the exposition made in the Country Gen-

tleman, confirms the written opinion given the consignee by the Inspector, that neither lot had ever been within 3000 miles of the coast of Chili."

From the above, no one can doubt that the article manufactured near Newark, is the same as that sent from Boston and New York to Baltimore. We estimated its "*out-side value*" at \$15 per ton. Dr. Stewart estimates it at \$13. We were told in Newark, that it had been sent to England, and the consignor avers that he was informed by "Drs. Mapes and Hayes, that it commanded a high price in England." Can any one doubt, therefore, that the "Chilian guano" referred to by Hayes and Mapes is the same as that described by us as manufactured near Newark?

Thanks to Messrs. Reese and Pleasants, the guano inspectors at Baltimore and Petersburg, the farmers of Maryland and Virginia have been put upon their guard against this worthless stuff, which some one at Boston has endeavored to palm off upon them, upon the authority, *as he states*, of Prof. Hayes, "Assayer to the State of Massachusetts," and Prof. Mapes, of Newark. We trust, however, that one of these gentlemen will be able to show that he has been in no wise accessory to this attempt at fraud. Our columns are open to these gentlemen, for any explanation they may wish to give, of their connection with this matter.

We also call upon the gentleman at Boston, who sent this spurious guano to Petersburg, Richmond, Baltimore, &c., to inform the public whether *he* was deceived by the manufacturers of the article and by the analysis and recommendations of Hayes and Mapes; and if so, to come out and clear his character from the stain which cannot fail to attach itself to his "respectability," if he remains any longer silent. He knows where he procured the "Chilian Guano," and, if he was deceived respecting its character, he can easily clear himself by exposing those by whom he was deceived. Will he do it? [*Country Gent.*]

TO KEEP FLIES FROM TROUBLING HORSES.—It is said that walnut tea, a handful of the leaves infused in a quart of cold water over night, and then boiled a quarter of an hour, applied with a sponge when cool, will keep flies from troubling a horse.

We have seen this thing one hundred times.—Please try it somebody. ED. SO. PL.

ON THE PEA CROP.

The committee to whom was referred a report on the value of the pea crop for food and for manure, have approached the subject with a full sense of its great importance to the whole system of Southern agriculture. It embraces within its influence results of the highest and most desirable character in the reproduction of soils, in rearing and sustaining all the domestic animals connected with the plantation, and furnishes a cheap, healthy and nutritious article for human consumption. Leguminous plants constitute an extensive family in the vegetable kingdom, embracing many genera and species, extending from the rattle-box, including clover, lucerne and sainfoin, to the locust of the forest.

In Northern latitudes, clover has long held its proper place as an agent in the restoration of soil, and as food for domestic animals; and like the pea, its high character not only depends on its nutritive properties, its porous and easily decomposed leaf and stem, but, as your committee will hereafter show, on a deposit of certain substances to the soil, not necessary to the perfect maturity of its seeds, but of the highest importance to the whole cereal crop, and particularly to wheat. The pea has long been cultivated in this district, and now forms no inconsiderable item in the provision crop; and yet, from the wasteful way in which the crop is consumed, its real value as food cannot be properly appreciated.

To illustrate the value of the pea as food, the committee will give its value compared with other articles of food, as analyzed by different chemists. Einhoff gives the nutritive matter of peas compared with grain as follows, per bushel: wheat, 74.47; rye, 70.39; barley, 63.33; oats, 58.23; beans, 68.45; peas, 75.49. The same chemist, from 3,840 parts of beans, obtained, starch 1,805 parts; albumen 851; mucilage, &c. 799 parts. It is believed that the nutriment property of the bean differs but little from that of the pea.

Dr. Playfair, whose analyses we will submit, states that the nutrient principles of plants are gluten and albumen, and that they chemically differ in nothing from the white of an egg, the muscle of an ox, or the blood of sheep. He divides food into two kinds: azotized and unazotized; that is, with or without nitrogen; the azotized is the principle forming muscular and other tissues, and the unazotized such as starch, mucilage, sugar, oil, &c., the fat forming principle.

From 100 pounds of peas he obtained water 16; organic matter 80½, ashes 3½; from 100 pounds of beans he obtained, water 14,

organic matter 82½, ashes 3½; from 100 lbs. of oats he obtained, water 18, organic matter 19, ashes 3.

The same chemist shows the equivalent value of several articles of food by analysis. From 100 pounds of flesh he obtained gluten 29; from 100 pounds of blood he obtained gluten 29; from 100 pounds of peas he obtained gluten 29, unazotized matter 51½; from 100 pounds of beans he obtained gluten 29, unazotized matter 52; from 100 pounds of oats he obtained gluten 10½, unazotized matter 68. The analysis of Indian corn by Dr. Dance gave to the 100 pounds, starch, sugar and oil 88.33; 100 pounds gluten and albumen 1.26; 100 water, 9.00; 100 pounds salts, 1.31.

From the above analysis it is most apparent that the pea is not surpassed in value for food by any known article, when the flesh and fat forming principles are taken together.

The usual way of feeding the pea, in an uncrushed state lessens its value as food, and is sometimes dangerous from the high fermentation which takes place before and during assimilation; the large quantity of carbonic acid gas disengaged frequently produces cholera and inflammation of the intestines, which would never occur if the pea was crushed into meal and fed with cut straw.

Nature uses the surface of the earth as a great laboratory, in which there is a constant chemical action going on in the restoration of the soil and in the production of certain substances necessary for the support of organic life, vegetable and animal. The earth is inorganic, possesses no positive life, no period of growth, perfection or decline; is governed by no law, except that of affinity, and is hence completely under the intellectual and physical control of man, in the application of those substances necessary to its greatest fertility. Vegetable matter is more or less valuable as a manure, in proportion to its susceptibility to decomposition, and the gases and other constituents they impart to the soil.

Ligneous fibre is insoluble in water, and in almost any other menstruum, under ordinary circumstances; the acids are decomposed on it, and a change of color is the only result. When perfectly dried, it resists fermentation altogether, and air and water decompose it exceedingly slowly. Although the gramineous and cereal classes are destitute of the ligneous fibre, so large a quantity of silic enters into the composition of their epidermis to give strength to the plants and protect them from the ravages of parasites and insects, that they are as impervious to the agents of decom-

position as the firmer ligneous fibre; and the small quantity of medullary matter they contain renders the whole an inconsiderable means of reproduction, when taken alone, and unmixed with other manures. Vegetable earth or mould, depends on vegetable organization. It is then the business of the agriculturist to select such plants, in connection with the profits of the plantation, as oppose the least resistance to the laws of putrefactive fermentation, and afford the greatest amount of nutrient constituent to the soil, of which the pea stands preeminent, and seems intended by nature to be the principal restorer of lands in this climate.

According to the experiments of Beccari, gluten, so absolutely necessary to the perfect maturity of the whole cereal crop, does not form a constituent of the seeds of leguminous plants. May not that vegeto-animal substance be thrown off by the excretory action of the roots, or remain unappropriated, with the stems and leaves, to be returned to the soil by decomposition, and the well known fitness of the soil for wheat after peas or clover depend on that fact?

Flour of good appearance sometimes will not rise; and the effect is generally attributed to the mill, or an unskilful miller; when in truth the land on which the wheat is grown is at fault, affording none of the material of which gluten is formed, or the grain has been injured by slight fermentation, the effect of unskilful stacking, or other causes. The pea crop in such lands never fails to restore the exhausted constituents of the soil, and insures a well matured grain crop.

Plants of the same species or kind should never follow each other. The wide-spread ruin, common to every plantation in the district, may be attributed to the planting cotton after cotton, till the over-taxed soil refuses longer to produce. Your committee are of opinion that a judicious rotation of crops, aided by ditching, subsoil ploughing and manuring, would speedily change the face of the district—that worn-out spots and gullies would disappear, and every acre of land return an ample reward to the laborer.

There can be no doubt but that the pea should be made the basis of that rotation. The pea is of rapid growth, comes quickly to perfection, and, under ordinary circumstances, is an abundant bearer; and is particularly rich in those constituents on which the formation of flesh and fat depends. It is one of those plants possessing fleshy leaves, a soft and porous stem, and makes large demands on the atmosphere for food. It not only leaves

the soil unexhausted for a grain crop, but adds to its fertility. It protects the surface of the ground from the hardening effects of the summer sun, and leaves the land more permeable to every fertilizing agent which may be brought in contact with it.

P. MOON, Chairman.

From the Germantown Telegraph.

THE OSAGE ORANGE.

BY THE PRESIDENT OF THE PHILADELPHIA SOCIETY FOR PROMOTING AGRICULTURE.

To the Editor of the Germantown Telegraph.—In the report of the last meeting of our Agricultural Society, it is stated I expressed the opinion that the Maclura or Osage Orange, pruned with the severity recommended by Dr. Warder of Cincinnati, in his address on that occasion, would not be long-lived. My opinion, founded on the experience of many years, is precisely the reverse: I believe it to be in a remarkable degree adapted to hedging purposes—perhaps more so than any other plant. The doubt I did express, imperfectly heard by the reporter, was, whether the Honey Locust was of similar value; and I do very much doubt its adaptation to hedges, to which it has been applied. While on the contrary the Maclura has every good quality to commend it: hardiness, vigorous growth, endurance of the shears without disease or morbid growth being induced, acrid juice which protects it against the attack of insects, pungent spines, and disposition to branch when “cut in”—these and other qualities indicate it as a plant which, it might almost be said, nature had designed for protecting the labors of the husbandman.

While on this subject, will you indulge me with space for a few incidental remarks on the original application of the Maclura to hedging purposes? During the administration of Mr. Jefferson the Western Exploring Expedition, known historically as Lewis & Clark's, was made, and resulted, among other things then considered of vastly more importance, in the discovery of this tree, in the Osage country, which, from its use by the Indians, they named “bow wood.” A few seeds collected by them reached Philadelphia, and from one of those seeds was produced the noble specimen still standing in the rear of my father's old homestead on Federal street. Its pendent branches and deep green glossy foliage, which no insect would approach, was for many years the admiration of all who visited the nurseries. For some considerable time the only mode of its

increase was by cuttings of the root, placed in pots under glass, and in that way some thousands were produced, which, from their great variety, were deemed of sufficient importance to be exported to Europe in charge of a special agent sent out by the late D. & C. Landreth, who disposed of them in London, and they now doubtless decorate the pleasure grounds of our aristocratic cousins. The parent tree in course of time flowered and produced abundance of fruit, which, from the circumstance of the specimen being pistiliferous, was imperfect. At a later period, another tree of similar origin, planted at the seed grounds on Fifth street, produced stamiferous flowers, which, as an experiment, were cut off with the branches attached, carefully wrapped in sheets, and conveyed to the female tree, a distance of two miles, when, greatly to the delight of all made acquainted with the fact, many bushels of "oranges," each with perfect seed, was the result! About the same time, trees at McMahon's nursery also produced seed, and the supply of plants rapidly increased, faster than the demand for ornamental purposes, to which they had hitherto been solely devoted.

My father, perceiving the promise of the Maclura as a hedge plant, used some hundreds of surplus ones to fill open spaces in hedges of English hawthorn, which he had set out in accordance with his early tastes, many years previously. As he had anticipated, they formed an impenetrable mass, and established it in his opinion, as the best of all plants for hedges. Many thousands were produced with a view to their sale for that purpose, and attention was called to them in various ways; among others, I (then a youth) wrote several articles on the subject, which were widely republished, especially in the west, where the means of enclosing prairie lands were of primary interest. This may have been about 1823. Really, my dear Mr. Editor, I fear you and I are approaching that state which "young America" irreverently terms "old fogies."*

Since then the Maclura has been slowly gaining in popular favor, and the seeds and plants have become articles of considerable trade. The former are now annually collected in Arkansas and Texas, to the extent, it is said, of thousands of bushels, and from reliable statements it is supposed two hundred thousand dollars are yearly expended in this country, principally in the west, for the seed

alone. The plants are also raised in large quantities, and set out and trained at a stipulated sum per rod, by parties who travel from farm to farm. The attention of Europeans is also directed to it, and it is presumed for the same purpose, as within a few weeks I have filled an order from the "continent" for a considerable quantity of seed.

Thus, Mr. Editor, from an accidental circumstance, have important results ensued; and we may, in reference to it, apply one of the early lessons—

"Big oaks from little acorns grow."

DAVID LANDRETH.

Bloomsdale, March 24, 1855.

BAD EFFECTS OF GRASS ON COLTS.

When horses are turned out to grass in the spring of the year, the succulent nature of the food causes them to purge, often to a great extent; this is considered by many persons a most desirable event—a great misconception. The herbage is overcharged with sap and moisture, of a crude, acrimonious nature, to such an extent that all cannot be taken up by the organs destined for the secretion of urine, or by the absorbent vessels of the body; the superfluous fluid therefore passes off through the intestines with the indigestible particles of food, and thus the watery fæces are thrown off. Flatulent colic or gripes is a frequent attendant. The system is deranged; but the mischief does not terminate here. If the purging is continued, a constitutional relaxation of the bowels is established, very debilitating to the animal, and often difficult to control. I am so decidedly opposed to an unrestricted allowance of luxuriant grass to horses at any age, that nothing could induce me to give it to them. After the second year hay should form a considerable portion of the daily food in summer to every animal intended for hunting or riding.

If a horse is supported entirely upon the grass which he collects in a rich pasture field, or upon that which may be cut and carried to him in his paddock, he must consume a much greater bulk than of hay in an equivalent time, to afford nourishment to the system. Grass being very full of sap and moisture, it is very rapidly digested, consequently the horse must be continually eating it. This distends the stomach and the bowels, and the faculty of digestion is impaired; for the digestive powers require rest as well as other organs of the body, if they are to be preserved in perfect condition. By the custom of grazing, the muscular system is enfeebled, and fat is substituted. This may escape the notice

* Our correspondent will oblige us by speaking for himself, and not mixing us up in his affairs.

of superficial observers, who do not mark the distinction between the appearance of a fat and a muscular animal; who conceive, so that the bones are covered and the points are rounded, all that is requisite has been attained. But that is a very fallacious impression. Let any person who is sceptical on this point ride a horse in the summer which has just been taken out of a grass field, along with another kept on hay and corn, at the moderate rate of seven or eight miles in the hour; the grass-fed horse will sweat profusely, while the other will be perfectly cool and dry. This proves that the system of the one eating grass over-abounds with fat and those portions of the blood which are destined to form that deposit.

Those who advocate grazing will no doubt exclaim, "Oh! this is a test of condition which is not required in young and growing animals." I beg to state that it is highly important if the acme of condition is to be attained by animals of mature age, that the growth and gradual development of their frames should be composed of those healthy and vigorous elements upon which the structure of future condition can be raised. Animal substances are to a very great extent subservient to the nature and quality of the food with which the individuals are nourished. I believe farmers would find it much to their advantage if they were to consider this subject with reference to feeding cattle and sheep, so that they might select those kinds of food which abound with properties more conducive to flesh than fat. There is no kind of food which the horse consumes which has not a tendency to deposit fat. It is a substance which must exist to a certain extent: but as it is muscular power, not a disposition to adipose rotundity, which enhances the value of the animal, the reasons are obvious what guide should be taken in the selection of food.

I have on a former occasion hinted the propriety of bruising the oats, and I will now state my reasons for doing so. The first I will mention is economy. Three bushels of oats which have undergone that process are equivalent to four which have not, and the animals which consume them derive greater benefit. Various schemes are adopted to induce horses to masticate their corn, all of which are ineffectual. Scattering them thinly over the surface of a spacious manger, mixing a handful of cut hay or straw with each feed, and such like devices, will not cajole the animal to the performance of mastication. A horse that is disposed to bolt his corn, how-

ever carefully it may be spread along his manger, will soon learn to drive it into a heap with his nose, and collect as much with his lips as he thinks fit before he begins to masticate. Whatever food enters the stomach of any animal, and passes away in an undigested form, may be considered as so much dross or extraneous matter, which, not having afforded nourishment, is prejudicial to the creature which consumed it. A mistaken notion of economy is often the incentive to turning horses out in summer, to be entirely dependent upon grass for their support. A few remarks will surely dispel that error. Twenty-two bushels of oats—allowing one bushel per week from the 15th of May to the 16th of October—may be as the produce of half an acre of land, and half a ton of hay that of another half acre, although a ton and a half per acre is not more than an average crop. It requires at least an acre of grass land to support a horse during the period above named.—*Mark Lane Express.*

MANAGEMENT OF GREENHOUSE PLANTS.

BY AN EXTENSIVE PRACTITIONER.

Greenhouse plants should never be supplied with much water in wet or frosty weather, and none unless the soil in the pots becomes dry. This rule must be particularly attended to, from the beginning of November till the end of February.

In March, the plants may be occasionally syringed overhead to clean and refresh the leaves, but always select fine days for the purpose; and let this, as well as the general waterings, be done in the morning, from the middle of September to the beginning of May, and at all other times in the evenings.

As the season advances, and the weather becomes milder, increase the quantity of air, until, by the middle of May, a large portion of air may be left on all night, except in case of severe frost. And this rule of admitting air must be attended to throughout the winter at every convenient opportunity; but always make a practice of shutting up early in the afternoon.

Always keep the plants clean, and perfectly free from dead leaves and weeds; this must be particularly attended to in the winter season.

About the beginning of March repot all the plants that require it, and top-dress the remainder with good fresh soil. Some free-growing kinds may require potting two or three times in the course of the summer, but the last potting should never be later than the middle of September.

As greenhouse plants differ materially from each other in habits, so also the soil suitable for them must vary in proportion. For a general idea on the subject, the following, with some few exceptions, will probably be found pretty near the mark :

All plants whose branches are fragile, and roots of a fine thready fibrous texture, with general habits like *Erica*, as *Diosma*, *Andersonia*, *Epacris*, etc., will require the same soil (peat earth,) and very similar treatment to Cape Heath.

Those whose wood and general habits partially differ, and whose roots are of a stronger texture, as *Accacia*, *Ardisia*, *Stenocarpus*, etc., will require a portion of sandy loam—in many cases about equal parts; and where the habits, etc. differ materially from the heath, only a small portion of peat earth will be required, and the compost may be made a little rich by the addition of well rotted dung.

Almost all Cape and other bulbs, as *Sparaxis*, etc., thrive best in a mixture of light rich sandy loam, leaf-mold, and a little peat. Shrubby and herbaceous plants, with luxuriant roots and branches, as *Myrtus*, etc., require rich loam, lightened with leaf-mold. Plants with powerful roots and but slender heads, as *Veronica*, *Senecio*, etc., require a light sandy soil, mixed with a small portion of leaf-mold and very rotten dung.

Never pot the plants in a soil too wet; it is better to keep the soil rather dry than otherwise. Nor ever sift the soil, but chop and break it as fine as possible, because sifting deprives it of the fibrous particles, among which the roots grow very rapidly. Always in potting give a good drainage with broken pots. In the beginning of June the plants may be removed to their summer station, out of doors. Always place them in an aspect screened from the effects of the mid-day sun, but yet where they will be able to receive the sun morning and evening; while in this situation they must be supplied with water as often as they require it.

In the beginning of September again examine them throughout, and pot all that require it, and top-dress the remainder; by no means let this be done later than the middle of September, or the plants will not have time to recover before winter.

Not later than the first week in October, prepare to remove them back into the greenhouse. Clean and properly tie them up, previous to setting them on the stage.

After they are removed again to the house, give them abundance of air, day and night, and continue gradually to decrease it as the weather becomes colder.

Propagation.—The propagation of greenhouse plants must be performed at different times of the year, according to the nature and habits of the plants, and the state of growth in which the cuttings will strike with the greatest freedom.

Some grow the best when the wood is quite young and tender, as *Fuchsia*, *Andersonia*, *Adenandra*, etc.; others when it begins to assume a brownish color, called half ripened, as *Heliotropium*, *Goodenia*, *Pimelia*, etc.; and others when it has become quite hard and ripe, as *Araucaria*, *Aulax*, *Melaleuca*, etc.—But as a general rule, half-ripened cuttings will do the best. Some plants, however, will not grow from cuttings of the stem at all; these are propagated by cutting off large pieces of the roots, planting them in pots of soil, and plunging them in a little bottom heat, as some species of *Accacia*, etc.

All hard-wooded plants make roots best in clear sand, but soft-wooded kinds should be planted in a mixture of loam; therefore after well draining the pots or pans intended to receive the cuttings, fill them, according to the nature of the plants to be propagated. On no account plant soft-wooded and hard-wooded cuttings in the same pot.

Some sorts will not grow readily without a little bottom heat. Plunge the pots in a cucumber frame, or pit of any kind, where they will receive the benefit of warmth.

After putting in the cuttings, give them a gentle sprinkling of water through a fine rose; keep the frame as closely shut down as can be until the cuttings are struck, which will be in about three weeks or a month, with some few exceptions. Look them over, and water as often as they require it.

Those sorts requiring to be covered with bell or hand glasses will require to have the glasses taken off occasionally and wiped, to prevent the cuttings from being injured by damp.

When the cuttings have struck root and are beginning to grow, then pot them in small pots filled with soil suitable to their nature; replace them for a while in the frame, and gradually expose them to the air, until they bear the temperature and treatment of the other plants in the greenhouse.

Sow the seed of greenhouse plants in pans or pots filled with a light soil, as early in the spring as possible; place the pots in a very gentle heat, keep the soil damp by covering with moss, and occasionally sprinkling with water; and when they are about an inch high, pot them off into small-sized pots, and treat them in the same manner as cuttings.—*Floricultural Cabinet*.

For the Southern Planter.

USEFUL HINTS FOR VIRGINIA GARDENERS.

BY E. G. EGGELENG.

The month of July is one of the hottest of the year, but is nevertheless important to the gardener as the season of preparation for all the crops of the fall and winter.

Celery.—The season for setting out the plants is about the first of August, but the beds in which they are to be placed should be made now. Dig trenches six or eight inches deep and from four to five feet wide, with spaces between the beds equal to the beds themselves. In removing the soil from the trenches throw half to each side, to be used in earthing at the proper time. After the trench is opened fill with good old manure to the depth of four or five inches and spade it in, pulverizing the ground thoroughly. The bed is then ready for use. It is probable that a crop of weeds will spring up between this and the planting season. If so, they can be eradicated by hoeing, and it is much better that they appear now than afterwards.

Cabbages.—This is the best period for planting cabbages for fall and winter use. In setting out plants in this month it is advised to select soil moderately rich, worked very deep. The disadvantage of putting cabbages at this season into very rich soil is, that they mature too early, and either burst after they have headed or rot. If the plants are not set out in this month, then rich soil is best to hasten their growth. Let the rows be three feet apart, with two feet between each plant. To make sure of every plant that is set out, the following very simple process should be adopted: Make a hole in the ground and fill with water, add soil thereto and stir and mix together until a thick mud is formed. Then take the plants and dip them into the mud moving them about therein until every root of every plant is coated with the mud. Then put the plants in their places and they will thrive despite the heat of the sun or the drought. By attending to this direction gardeners will be spared the necessity of replanting, as a plant thus treated rarely fails to grow.

Cucumbers.—Such as are planted at this season are not intended for table use but for pickling purposes. The old fashion of planting them is to make hills, but there is another and as we think better way. Our custom is to open a furrow with the plow six or eight inches deep. Into this is put very old manure, three or four inches thick, which is well mixed with the soil by the spade. Then

run a furrow on each side of this trench, which throws the dirt over upon it and makes a ridge, which is finished off with the hoe. On this ridge the seed are put, about an inch deep and from six to eight inches apart. To prevent the soil over the seeds from encrusting, cover lightly with old tan or manure or trash, and in two or three days the plants will be up. Should all come up they will need to be thinned so as to leave them twelve inches apart. This, however, should not be done until they begin to run, as many are likely to die out. The *Pickling Cucumber* should be sown as best suited for the pickling tub.

In like manner may be sown muskmelons, cantelopes and gherkins, but in different parts of the garden, or else the seeds will be deteriorated.

Egg Plants.—These were planted last month. They are liable to the attacks of numerous insects, whose approaches and ravages must be prevented. The only agencies which have been found useful are trash tobacco or soot. These should be applied before the insects appear, as when once they have obtained a footing among the plants they are not easily dislodged. Here, indeed, "an ounce of prevention is worth a pound of cure."

Irish Potatoes.—Every year the people of our Virginia cities are compelled to rely upon importations from the North for their supplies of this excellent root, when a little care and prudence would enable Virginia farmers and gardeners to raise any quantity. Those that were planted early in the year mature about this time and will not keep through the winter. At this time, however, they may be planted, and such as are will keep just as well as any that are brought into the State from abroad. One thing deserves to be noted in connection with planting the seeds. Many persons cut the potato into as many pieces as there are eyes and put them at once into the ground. There is no harm in cutting the potato, but the pieces should be kept exposed to the atmosphere until the wounded part is healed, that is, until the cut place has dried; otherwise, the pieces are apt to rot, and the decay invariably begins just where the sap remains upon the cut surface.

It is usually very difficult, at this season of the year, to procure potatoes for planting, and many persons believe that it is impossible to preserve them in our climate through the summer. These are mistaken. They can be kept, as we shall show in a future issue of the Planter. At present these directions would avail nothing. All that we say now is, plant potatoes for the winter.

Tomatoes.—It is usual with most persons to let the vines lay upon the ground, much to their injury, and to the injury of the fruit during the hot season. To obviate the evil to which we refer, without the great trouble of staking the mass of vine, we merely raise the vines and place under them brush, which answers just as well. The brush, which, till now, has supported the pea vines, may be used.

Strawberries.—It is very much the fashion in this region, with cultivators of strawberries, to neglect the strawberry beds, when the fruit of the year has been gathered. Walk in some gardens and look at the beds, and not a plant is to be seen because of the weeds. This is a fatal error. The beds should be kept scrupulously clean, and the surface of the ground loose and light to assist the runners in rooting. This occurs during the month, and to have fruit of good quality from the new plantations the spring after they are made, care should be taken to plant out only one runner from each of the old plants, and that the first one which appears. Others will make their appearance but they should be cut off, so as to give the one that is allowed to root all the nourishment which it can derive from the parent stock. It may be, however, that the gardener does not wish to make new plantations, and in that event none of the runners should be spared, but as fast as they appear they should be removed.

SILESIA MERINO SHEEP.

In our last week's paper, mention was made of the shearing of some Silesian Merino sheep, on the farm of Wm. Chamberlain, Esq., of Red Hook, N. Y. As this variety of sheep will probably occupy for time to come, a prominent position with the wool-growers of this country, we deem it proper to note some points in regard to its history, in connection with facts having more special reference to the specimens which came under our examination on the occasion alluded to.

In 1851, Mr. George Campbell, of West Westminster, Vt., in company with Mr. Wm. B. Sanford, of Orwell, in the same state, travelled through Spain, France, and several of the German States, for the purpose of seeing the fine woolled sheep of those countries. In Germany they were so fortunate as to obtain the personal aid of Mr. Charles L. Fleischman, then American Consul at Stuttgard, whose thorough knowledge of the sheep husbandry of that region was of great importance to them in accomplishing their object. Among the celebrated flocks they examined, was one in Prus-

sian Silesia, owned by Messrs. Fischer (father and son,) the foundation of which—one hundred ewes and four rams—the senior partner procured from the Infantado Nigretti flock, in Spain, in 1811. From this selection, the present flock has been wholly bred—no blood from any other sheep having been admitted for forty-four years. This item deserves particular attention from its influence in establishing a peculiar character for the flock, and as showing that benefit may result from a judicious course of breeding from animals more or less allied by consanguinity. The flock has latterly averaged 600 head, the surplus being annually disposed of at high prices to breeders from Hungary, Russia, and other countries.

Messrs. Campbell & Sanford purchased from the flock of Messrs. Fischer, forty ewes and several rams, which they brought to this country. We had the opportunity of examining these at Troy, N. Y., shortly after their arrival, while they were on their way to Vermont. Although then in low condition from the effects of their long confinement, we were struck with the many valuable traits they exhibited, and in an article written at that time expressed the opinion that they would prove an acquisition to the country—an opinion which subsequent experience has fully confirmed.

We quote the following as giving a good description of these sheep, from Mr. Sanford's notes of his European tour, published in the *Albany Cultivator*, in 1851:

They (the breeders) have always had two things uppermost: constitution and weight of fleece. These sheep have more good points than any that I have ever met with before. They are clothed in wool from the nose to the hoof. The wool is thickly set, and an even surface. They possess what all good breeders in Germany consider very essential—a perfect wool staple. The wool hair being of the same size all the way—the wool as thick on the out end as it is near the body. They are very careful about keeping up the thickness of the wool, in order to get the greatest weight of fleece. They prefer wool about the medium length. If they get it too long it becomes thin and flabby, parts on the back, and they lose in weight. They say it is much easier to get length than it is to retain thickness.—The sheep will shear as much according to the weight of carcass, I am sure, as any sheep I ever saw. There is no waste space on them, and the wool is quite fine for Merino, and very thickly set. The wool is very clean and white on the inside, but quite dark on the outer ends.

We believe Mr. Chamberlain was connected with Mr. Campbell in the importation above referred to. Since then these gentlemen have associated with themselves Mr. Wm. H. Ladd, of Richmond, Jefferson county, Ohio, for further importing and breeding these sheep. Mr. Chamberlain has been himself to Silesia, and made additional purchases from Messrs. Fis-

cher. A part of the late importations have been taken to the farm of Mr. Ladd, in Ohio, part are kept by Mr. Campbell, and the remainder by Mr. Chamberlain. Some rams have been sold and taken to different sections of the country. There are 101 ewes and several rams at Mr. Chamberlain's. About sixty of the ewes had lambed at the time of our visit. A few lambs had been lost, but the loss was more than made up by twins, so that the lambs reared would outnumber the ewes.

We examined many of these sheep very closely before they were shorn, noticed particularly their shape and appearance after the wool was taken off, and carefully examined their fleeces before they were tied up. The sheep appear to excel in the following points: 1st, the thickness of the wool as it stands on the skin, growing to an unusual extent on the belly; and covering every part, giving an uncommon weight of fleece in proportion to the size of the carcass; 2d, the fineness of the staple considered in reference to the weight of fleece; 3d, the uniform character of the fleece, the wool on the belly and thighs approximating, to a remarkable degree, the quality of that on the back; 4th, the fullness (uniform size of the pile throughout its whole length,) evenness, and elasticity of the staple. On parting the wool on the body of the animal, it appears, to use Mr. Fleischman's expression, "as a uniformly woven cloth."* It should be added that the sheep are well shaped; they have rather small bones, and the body is symmetrical and pleasing to the eye. The different individuals also bear a close resemblance to each other, showing that their characteristics are thoroughly in-bred. They appear to have very good constitutions. Mr. Chamberlain is inclined to think they would bear the usage commonly given flocks in the country, better than the French sheep, and this opinion is the result of several years' experience with both.

We took the following memoranda in regard to seven ewes. They were unwashed—the weight of carcass was taken after shearing:

No. 32: 3 years old; fleece 11 months growth, weighed 8 lbs. 3 oz.; carcass, 70 lbs.; weight of her lamb, dropped 20th December last, 51 lbs.

No. 100: 2 years old; fleece 11 months growth, weighed 7 lbs. 8 oz.; carcass 73 lbs.; weight of her lamb dropped 20th December last, 54 lbs.

No. 111: 2 years old; fleece 11 months growth, weighed 8 lbs.; carcass 78 lbs.; weight of her lamb dropped 2d March last, 25 lbs.

No. 156: 3 years old; fleece 11 months growth, weighed 7 lbs. 10 oz.; carcass 77 lbs.; weight of her lamb dropped 13th December last, 45 lbs.

No. 213: 3 years old; fleece 11 months growth, weighed 9 lbs.; carcass 90 lbs., lamb dropped 17th

December last, was suckled till April 2d, when it died.

No. 89: 2 years old; fleece 11 months growth, weighed 7 lbs. 12 oz.; has not yet lambed.

No. 326: 3 years old; fleece 11 months growth, weighed 9 lbs. 5 oz.; carcass 84 lbs.; her lamb dropped 23d April, not weighed.

These were all the ewes whose fleeces we took particular note of. They were not sheared very closely; in some instances it was thought half a pound more wool might have been got from a sheep. None of the lambs were weaned. The following was the only ram weighed:

No. 13: 5 years old; got over 100 lambs last fall—fleece 13 months growth, weighed 14 lbs. 12 oz.; carcass 125 lbs.

Messrs. Chamberlain, Campbell & Ladd desire to state that they would cleanse the fleece of this ram, and put it in market for dollars and cents in proportion to weight of carcass, against any fleece of thirteen months' growth taken from any ram in America the present season.

The wool in all the above fleeces was clean, for unwashed. Mr. Ladd, who has had much experience, both as a producer and dealer in wool, thought a deduction of thirty per cent. would bring the fleeces into a merchantable condition—a condition in which wool of that quality has sold for the last ten years at fifty to sixty cents per pound.

It is claimed that, with most flocks of the country, a cross of a Silesian ram on ewes of any other variety of Merinoes, will increase the weight of fleece in the progeny a pound per head, or upwards, over the stock to which the ewes belonged, and that, except with the finest Saxon, the quality will be improved. Mr. Chamberlain has crossed the Silesian with the French, and Mr. Campbell with both the French and Spanish—the latter having been long in the country—and they assure us that the results correspond to the above statement. In corroboration of their statements, we take the following from remarks made at one of the agricultural discussions at the State House, in this city, last year, by Mr. Russell, representative from Pittsfield. The remarks were published by us at the time:

He (Mr. R.) spoke of the Silesian sheep, which he regarded perfect as to form, with a compact and fine fleece. He saw a lot of twenty yearlings, a cross of the Silesian with the old-fashioned Spanish (the sire being a Silesian ram bred by Mr. Campbell) which averaged five pounds of washed wool per head, that sold for sixty-three cents a pound. The sheep were weighed after being shorn, and none of them weighed over sixty-one pounds each; one which weighed only forty-four pounds, gave four pounds and thirteen ounces of wool, washed as clean as it could be in cold water.

* Patent Office Report for 1847, p 273.

THREE FIELD SYSTEM AND STANDING PASTURE.

With a view to the Destruction of Joint Worm, the Extirpation of Wire Grass, Garlic, Bushes, &c.

The cultivation of the soil, seems at this time, to have awakened a new interest in the agricultural community, arising no doubt from the enhanced value of the products of the earth, from the farmers profession (for it may now be termed a profession) having improved rapidly in importance, and being emphatically at the present prices of bread-stuffs "a money making business;" and but for the impediments in the rearing of crops, arising from joint worm, and other innumerable animalculæ with which the soil is replete, the farmer would at this time be at rest with the world and "the rest of mankind." Having noticed the rapid progress of this much talked of joint worm, and being introduced to it by practical illustration in my own crop of wheat, as well as having read much upon the subject by correspondents, I have determined to give my system of rotation of crops, as the best at this time for their destruction, as well as the suppression (if not eradication) of wire-grass, garlick, bushes, &c.

I would premise that this system of rotation is based upon the supposition that the land has been thoroughly limed or marled, or that it is sufficiently calcareous, in order that it may decompose the vegetable matter which may be added to the soil. This rotation which I have adopted this year, after some deliberation—(having relinquished the five field system) has been preferred from the fact I had often noticed the growth of wheat after corn, and the great labor and difficulty of putting in a crop of wheat after corn; the cutting down of the corn and its removal from the field, occupied so long a time, that it was impossible to get the wheat in the land in time, added to the fact that I had never seen a crop of wheat succeeding corn produce as much as the land would have done under other circumstances. Another reason why I have abandoned the five field system of rotation is the innumerable quantities of briars, garlick and wire-grass, which are constantly springing up on the land, causing too much labor to remove them before cultivation, as well as the great difficulty of getting a stand of corn, arising from the undecayed vegetable matter which remains in the soil, and from the length of time which has elapsed since the field had been in a hoed crop. And still another objection to the five field system arises from the fact there is only one-fifth of

the land in corn, a crop much more certain than the wheat crop.

The rotation consists of having land divided in three equal fields, with a small portion of swamp land or the enclosure of woodland, (with a small portion of open land attached if necessary) for the purpose of grazing cattle, until the wheat is removed from the wheat field, when they can be turned into it, for the purpose of grazing and trampling the land for the succeeding crop of corn. By this rotation, one field is in wheat, another ploughed in the spring after planting corn, and sowed in peas in June, and the third in corn. The farmer adopting this system would the first year follow his wheat crop with corn, and his intended next years' field for corn would be fallowed up this summer for wheat, and his present corn field would remain until next spring for the purpose of fallowing it up for peas. There may be many objections urged against this rotation, such as ploughing the field for peas, (which I conceive the greatest) but it can be done at a time the farmer can easily spare the time, say immediately after planting corn, when two or three weeks can be appropriated to fallowing the land for peas, and if the land is light it may be done with single ploughs. And although the farmer may by this system require a good plough team, yet this spring ploughing affords him a better opportunity of getting in his wheat by at least the middle of October and of gathering his corn some six or eight weeks before the end of the year, which time can be devoted to manuring his corn land, and of accelerating his crop in order that he may be ready to commence his fallow for peas. This rotation consists of wheat, corn, peas: the wheat following the peas which are fallowed in the land for the benefit of the wheat and land.

The great advantage gained by this rotation is not only the fallow of peas for the wheat, which I consider the very best vegetable matter that can be given to the land, but the advantage gained on the early seeding of the wheat crop, by which the ravages of the joint worm can the more easily be overcome, and the early maturing of the wheat, by which the rust and other diseases of the crop may be avoided. That this rotation will suppress, (if not entirely eradicate) wire-grass, garlick and bushes, there cannot be a doubt as it is admitted that any crop which will effectually shade the land for any length of time must suppress the growth of wire-grass, and the crop of peas and the wheat crop, being both shading crops, its suppression must be the consequence. And the third crop being a

hoed crop must destroy the grass as well as kill the garlick and bushes which are constantly springing up on the land.

That this rotation will admit of the most profit to the farmer, there cannot be a doubt, as it gives two-third of the arable land for cultivation, while the five or six field only gives three-fifths; and we know the true secret of all successful agriculture is to draw from the soil to its utmost capacity of production, consistent with its uniform and progressive improvement—and that it will admit of successful improvement can be easily demonstrated, as all the manures which are now in use for the improvement of land can now be used, with the exception of clover, which is substituted by the much more nutritious pea. Peas belong to the leguminous class of plants and their leaves and pods are larger than any other plant used for the improvement of the soil, consequently they draw a larger quantity of the useful nitrogenous matter from the atmosphere; which when ploughed in the land are more easily decomposed and give up their valuable substance for the food of plants.

In adopting this system of rotation, the farmer can much more readily improve his land with lime, marl, guano, plaster, &c., from the fact that peas will give all the necessary organic manures to be decomposed by these inorganic elements added to the soil. And again the improvement must be much more rapid, from the fact that it can be accomplished in three instead of five or six years. In the spring an application of lime can be made upon the corn land, guano can be used in much smaller quantities upon the peas, having seen a better result from one hundred pounds of guano on peas, than three hundred upon land without peas. And in every instance one bushel of plaster to the acre should be used upon the peas when they have fully attained their leaves.

Now that joint worm has made its appearance in Eastern Virginia, I can the more confidently recommend this system of rotation upon the light and alluvial lands of this section, as the surest means of their destruction. As it has a hoe crop and a green crop for fallowing, the two succeeding years after it has been in wheat, by which the worm is not permitted to commit its ravages the following spring after the wheat crop has been removed, and as the land has been grazed in the fall, ploughed early the following spring before the young worm is hatched, and thoroughly worked in corn, it would seem that this enemy must be destroyed. But added to this, the field is again ploughed the following

spring and a crop of peas sown over the field, all of which must become, if it should be generally adopted, a certain and sure preventive against the ravages of the joint worm.

We live in an age of progress—and I leave it to the candor of all to say if the five or six field system of rotation has not too much of "the Old Fogysm" about it for "Young America," who cannot wait to accomplish in five what can be done in three.

My ideas have been hastily thrown together and written, and my mind drawn to this subject by a communication in the last Planter from my friend, Dr. John R. Baylor, of Caroline, whose energy, industry and scientific farming has not an equal in Eastern Virginia. I hope the above suggestions will meet his wants. * * *

*Forest Hill,
King & Queen Co.*

THE SHORT HORNS AS MILKERS.

The Society of Shakers at Pleasant Hill, Mercer Co., Ky., have sent seventy-four pedigrees to the second volume of the American Herd Book, now about to be published. Accompanying their pedigrees they say: "Some of the cows have been named as distinguished milkers; others again that have scarcely less merit have not been mentioned. *Here*, cows that do not, with the care and attention given them, give 24 quarts of milk a day, are not esteemed *ordinary* milkers, and those that give 34 quarts a day are among the very best. But greatly improved stock implies greatly improved means and manner of feeding and caring for them. Take an extra or a good cow, and let her suffer cold, hunger, and other privations for a considerable time, and what will she be? Some say *keep* is everything in the improvement of stock. This is not the fact, but it is a considerable item in it. Great pains and care in crossing are necessary to improvement; but this is, to some considerable extent, unavailing without improved means of keeping, and the manner of caring for them." Here, then, is the whole story in a nut-shell, as the experience of this unpretending, pains-taking community have proved the Short Horns for thirty years.

Among their cows stands *Roxilla*, and in a note attached to her pedigree is written: "This cow was calved in 1839. She is remarkable for health and great constitutional powers, as well as for the quantity and quality of her milk, and she is yet living in apparent good health. She has given birth to 13 calves, and is soon to have another. The early maturity of this stock is no argument

against its longevity. For years of her prime Roxilla gave 32 quarts of milk per day for months after calving, and fell off but little comparatively afterwards—never going dry between times of giving birth to her calves; and her thirteen calves will compare well with those of any other cow."

We knew another Short Horn cow some years ago, belonging to Mr. Stevens, of Batavia, N. Y., which in her prime, gave 39 quarts in a day, for several days in succession, on grass only. Our informants were John S. Ganson and Pardon C. Sherman, now residents of Buffalo, then living in Batavia, who saw her milked. The two sisters of this cow, at the same time gave—one 28 and the other 32½ quarts; and a daughter of one of them, two years old, with her first calf, gave 22 quarts; and the daughter of the other, three years old, gave over 26 quarts. This was in June, 1841. The above old cow was Princess IV, (recorded page 216 of the first volume of the American Herd Book,) got by Monk (1249), E. H. B. We saw her a few years afterward, at the age of *nineteen* years, then a large, vigorous, healthy cow, heavy in calf—which was her last one. She died or was fed and slaughtered, at the age of 20 years.

In June, 1844, we saw a fine, large Short Horn cow, also called *Princess*, on the farm of Messrs. Wells and Paoli Lathrop, at South Hadley Falls, Mass., which was then *nineteen* years old. The preceding October she dropped a fine, large calf, which, with its dam, was doing remarkably well. Will any one show us three native cows equal to the above for age, breeding and milking?

SALT IN FEEDING CATTLE.

From some slight and inconclusive experiments of our own, as well as from physiological considerations, we have had our doubts whether it was good economy to allow animals, *feeding for the butcher*, the free use of salt.—Salt is doubtless conducive to health, favoring the formation of bile, and aiding in carrying off offensive matter from the system; but there is no reason to suppose that it favors the accumulation of fat. Liebig, indeed, asserts that "the absence of common salt is favorable to the formation of fat," and that the "fattening of an animal is rendered impossible when we add to its food an excess of salt, although short of the quantity required to produce a purgative effect." Recently, however, in allusion to experiments made since the publication of the work in which the above sentences occur, Liebig says: "Salt does not act as a producer of flesh; but it neutralizes the inju-

rious actions of the conditions which must be united in the unnatural state of animals fed or fattened in order to produce flesh; and the advantages attaining its use can hardly be estimated too highly."

The experiments of Boussingault have often been alluded to, as indicating that salt by no means exercises a beneficial influence upon the growth of cattle, and upon the development of flesh, to the extent usually ascribed to it.—His more recent experiments, however, result in favor of salt. Thus, two lots of steers, of three each, were fed on hay for 13 months, one lot being allowed salt, the other not.

The average weight per head of the salted lot, at the commencement of the experiment, was 655 pounds; at the end of 13 months, 2,090 lbs. Increase 1,135 lbs. They consumed per head 15,972 lbs. of hay. One ton of hay, therefore, produced 143 lbs. of increase of animal.

The second lot, which received no salt, averaged at the commencement of the experiment 896 lbs; at the end of 13 months, 1,890. Increase 994 lbs. They consumed per head 14,553 lbs. of hay. Or one ton of hay produced 137 lbs. of increase of animal.

The steers receiving salt produced 6 lbs. more increase for each ton of hay consumed than those which were not allowed salt. This may be considered only a slight advantage, and in France did not pay for the cost of salt: in this country, however, where it is much cheaper, its use will doubtless, be profitable.—Boussingault remarks "the salt exercises no considerable influence on the growth, yet it appears to exert a beneficial effect on the appearance and condition of the animal." Up to the first fourteen days, no perceptible difference was observed between the two lots; but in the course of the month following, the difference was visible even to the unpracticed eye. In the beasts of both lots, the skin to the touch was fine and sound, but the hair in the steers having salt "was smooth and shining; that of the others dull and erect." As the experiment progressed, these signs became still more prominent. "In the animals of the second lot, after they had had no salt for a year, the hair was matted, and the skin here and there devoid of hair. Those of the first lot on the contrary, retained the look of stall kept beasts. Their liveliness and frequent indications of the tendency to leap, contrasted strikingly with the heavy gait and cold temperament observed in those of the second lot. "There can be no doubt," Boussingault adds, "that a higher price would have been obtained in the market for the oxen reared under the influence of salt."

PRESERVATION OF WHEAT FROM THE ATTACK OF THE WEEVIL.

Numerous remedies have been proposed to protect wheat from the destructive ravages of the weevil, but most of them have been impracticable or too expensive. M. Caillat, in France, recommends the use of tar, as a certain and economical agent for their destruction. He says:

"The efficacy of tar in driving away the weevil and preserving the grain, is an incontestable fact. My father had, a long time ago, his granaries, barns, and the whole house, infested with these insects, so much so, that they penetrated into all the chests, and among the linen. He placed an open cask impregnated with tar in the barn, and then in the granaries; at the end of some hours the weevils were seen climbing along the walls by myriads, and flying in all directions away from the cask. On moving this tarred vessel from place to place, the premises were in a few days completely cleared of these troublesome and pernicious guests. The agriculturist who wants to get rid of weevils, may, as soon as he perceives their presence, impregnate the surface of some old planks with tar, and place them as required in his granaries. Care must be taken to renew the tar from time to time in the course of the year, to prevent the return of the insects."—*Comptes Rendus*.

SUCCESSFUL EXPERIMENT WITH PEAS.

A gentleman well known in the South, sowed a field in oats, so poor that it yielded only 7 bushels per acre. As soon as the oats were off, the land was plowed and sowed in peas, which were turned in when at their rankest growth. The next year it was sowed in oats again, and produced fourteen bushels to the acre. They were again immediately followed by peas, and the next season oats, which gave a product of twenty-eight bushels per acre. This was followed by a third crop of peas, and a yield of over forty bushels of oats to the acre. *The land was raised by three coats of peas, from seven to forty bushels per acre.* Farmers, read, practice, improve. This must become an important branch of your system of manuring. Let it be combined with some methodical plan of saving, collecting and applying every material about the premises that will enrich the land, and in four years every poor farm on which the system is adopted and faithfully carried out, will double, and in some instances, quadruple its productions.

EMERY'S SEED PLANTER AND DRILL BARROW.

I have used this drill in planting corn the last two years, with great advantage. It plants the corn with accuracy, dropping from one to five grains at distances varying from three inches to eight feet, as desired. It opens the furrow, drops, covers and rolls the corn, at one operation; is an easy draught for one horse, and will plant from five to ten acres of land per day. This year I planted 170 acres with two drills in fifteen days, saving each day one bushel of corn, and the labor of two horses and four hands. At a fair calculation the saving in labor and corn would be \$5 per day, or \$75 for fifteen days. The drill cost me in Richmond, two years ago, \$, and I consider it one of the best implements that I have ever used. We owe its introduction into Virginia to that able and ardent agriculturist, L. E. Harvie, Esq. If the patentee, H. L. Emery, Albany, N. Y., would make his drill rather stronger, lift the stilts, and establish an agency in Richmond, it would be greatly advantageous to himself and the State. Full directions accompany the drill.

WM. H. HARRISON.

CAMPHOR vs. PEA-BUGS

Having observed in the *Horticulturist* an inquiry relative to seed-peas damaged by bugs, I will offer a remedy, perhaps not new, but new to me. Four years ago, last spring, my seed-peas were more than half destroyed by bugs, the largest and best varieties being most injured. The summer following, I had boxes made, one for each variety, with a cover; and when the peas were gathered, I put into each box, with a quart of peas, from six to eight bits of gum-camphor, the size of a large pea, and mixed them together, and closed the box. The next spring there was not a pea injured. I have pursued the same course every year since, and have not had one pea affected by bugs.—*Plow, Loom and Anvil*.

GUINEA FOWLS vs. RATS.—A correspondent of the *Prairie Farmer*, who was very much annoyed by rats, tried shooting, poisoning, and everything he could think of; but they defied the whole category. He then heard that they would not remain where Guinea fowls were kept, and procured several, and now says that for over two years he has neither seen nor heard a rat about the premises.

We doubt the above rat remedy, and should be glad to hear from others who have tried it to know whether it is effectual.—*American Agriculturist*.



THE SOUTHERN PLANTER.

RICHMOND, JULY, 1855.

TERMS.

ONE DOLLAR and TWENTY-FIVE CENTS per annum, which may be discharged by the payment of ONE DOLLAR only, if paid in office or sent free of postage within six months from the date of subscription. Six copies for FIVE DOLLARS; thirteen copies for TEN DOLLARS, to be paid invariably in advance.

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Office corner Main and Twelfth streets.

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A limited number will be inserted at the following rates: For each square of ten lines, first insertion, ONE DOLLAR; each continuance, SEVENTY-FIVE CENTS. Advertisements out of the City must be accompanied with the money, to insure their insertion.

It is indispensably necessary that subscribers ordering a change should say *from* what to what post office they wish the alteration made. It will save time to us and lose none to them.

Postage on the Southern Planter, (when paid in advance,) to any part of the United States one cent and half per quarter, or six cents per annum.

THE WHEAT CROP OF VIRGINIA.

It is very common, as we all know, when men change an opinion, to compensate by as much error on one side as they had in the first instance committed on the other; and farmers, whose revenue depends entirely on their crops, are perhaps more given to this oscillation than other men. It is particularly exemplified as to them in the present harvest. But a few weeks ago the whole of Virginia, except in a few circumscribed localities, was suffering from a drought which, in duration and intensity, so far surpassed any other that had been known as to threaten a famine. The wheat crop especially was pronounced the most complete failure that had ever occurred. But rain fell after the fields had headed, and then ensued an unexpected improvement. Comparing the state of the wheat then with what it had just been, and not with what it ought to have been at that season of the year, the farmer cast aside despondency and proclaiming that he *never* had seen wheat improve so much, declared that he really thought he would make an average crop.

That seems to be now the general opinion among commercial men hereabouts, and it is very natural that those whose gains depend on a wide margin between purchases and sales, should entertain it honestly and propagate it widely and in good faith. But we think they are mistaken as to the extent of improvement. The rains came too late—the wheat had not branched sufficiently, it had not attained the requisite height so as to get a fair exposure to the sun, had consequently too many underling heads in it, and having begun to “fill,” or form grain before the rains commenced, and accommodating itself to the existing state of things, had formed shorter heads and fewer grains in the mesh, as it is called, than is usual for an average crop. The effect of this state of things has been all along very obvious to minute inspection, and yet might easily escape a less particular observation, as may be very easily understood by those who know that lime on lands that need it will sometimes add twenty per cent to a crop without showing any increase to the eye so long as it is growing in the field.

But this state of things is the case mainly on the good or guanoed lands, where there was exemption from the insect pests which have devastated so large a portion of the wheat region of the State. On the poorer lands the case is still worse; on them, as all farmers know, rain, and a plenty of it, at the proper time, is indispensable to the scanty crops they generally make, and such rains they did not get. The consequence is extremely short crops in such situations. The product, it is true, will be considerably increased over our calculation in the last Planter, but we must continue to think that a very short crop, but little if any, over one half, will be made in Virginia, and we come to this conclusion after as much information as colloquy with casual visitors and a pretty extended private correspondence can afford. Since beginning this article we have heard of two large crops, samples doubtless of many others, which have not turned out as well as was expected, and the rains of this and the last week, [it is now raining steadily—June 25,] must operate injuriously both as to quality and yield of what has not been secured.

*We were lately asked what we meant by a half crop. We mean just this, and presume that every farmer in Virginia attaches the same significance to it: that a half crop is only half of what a man's land may be reasonably expected to yield in a fair season; and when we say that a county, Powhatan for instance, will make but half a crop of wheat, we mean that the average product of that county, taking low grounds, upland and forest, will be only half as much as a reasonable man would expect it to be on an average of seasons; and so as to the State at large. As to predicting the

number of bushels of wheat to be made in Virginia, that cannot be arrived at from any data that we know of; with the many outlets for produce and the blunders in the census tables, it is impossible to get at anything like an estimate of an average crop, numerically speaking.

It is said that a much larger breadth of land was sowed in wheat last fall than is usual. But we cannot learn how that fact has been ascertained, and do not believe it. The price only rose extravagantly in the latter part of summer, and it was too late then to make preparation for a much heavier seeding than usual; farmers cannot in a moment change all their plans, and adapt their rotations to the speculations of a merchant, and if they had—as they have *not*—the labor and teams that would enable them to *rotate* according to the market, they are too wise and wary to try such ventures. Besides, the fall was so dry that in the most extended wheat regions the trouble was to plough and sow the accustomed quantity of land.

In other States the crops are said to be good, but we have yet to learn that they are anywhere better than an average. In the West, Northwest and North, the winter was very hard, and the spring late, dry and cold, circumstances particularly unfavorable to the full yield of spring wheat, which is largely sowed in those regions. Passages like the following from the Ohio Farmer, are continually meeting our eye: "Within the last two weeks, great and abundant rains have refreshed the parched earth, and changed the gloomy anticipation of the husbandman, into bright prospects of a rich harvest, and a bountiful return for the year's toil." But this is all a mistake; a fortnight's seasonable weather never yet made "a rich harvest" out of well founded "gloomy anticipations," though a three days rain has ruined many a bright prospect, and may yet in this particular instance, if our present weather invades the later crops of the free States, where the weevil also threatens to divide the crops with the sickle.

It is true that more wheat has been sowed in the Northwest than usual, but under the impetus of immigration rather than high prices; and that will doubtless affect the quantity somewhat, but not much, we think, as far as price is concerned, in view of circumstances which did not exist at the last harvest, and certainly not to such an extent as to operate a fall on the principle of over production.

The prospects of the crop abroad, as far as any indications are yet afforded, are not very good, as may be seen more fully in an article of the Mark Lane Express, which we take from that very valuable Journal, the New York Economist, (which should be in the hands of every producer in the country.)

As to "how the markets will rule" the coming season, that is ticklish ground, and very few are entitled to tread it confidently; but from all we can see we have no doubt that wheat, however it may start, will be higher this year than it was last, and we advise farmers not to be in a hurry to sell. The price now is so much higher than heretofore, that a man, sure of more than he dreamed of two years ago, can afford to risk something for the sake of a rise such as we anticipate. We,—and the fact is mentioned that the motive may not be misunderstood—mean to sell early; because we want money, having failed to get more than one-seventh part of the eleven thousand dollars due us from the gentlemen who labor under the delusion that they *patronize* the Southern Planter by owing it an aggregate debt of more than \$9000.

Our opinion in this regard is based on the class of facts that will be found in the above referred to article from the Mark Lane Express, and from other considerations which lead us to believe that prices will never again come down to "old levels." Wheat has never risen, in any era, on an average of prices, to the proportional rates of other products—perhaps providentially, as it is the main breadstuff of so large a part of mankind—but it has always felt the fluctuations of other staples, and risen, if it *was* at a lower rate, as they have risen. We think it will do so now, and thus give the farmers some of the benefits of the great gold supply, which all other classes seem now to be enjoying. It will also derive some advantage indirectly from the same thing. Within the last year more wheat was consumed in England, though the prices were higher, than the year before; and everywhere the demand for other food at enhanced rates was increased, and is still increasing, but not exactly in the ratio of wheat. This would seem to shew that the condition of the great consuming class is improving, and that high prices are in part the result of competition among the buyers as well as of a scarcity of the article sought.

The Board, too, is now clear: there is no surplus wheat in the world, and we begin the sale of the crop now with at least a chance of short crops in several countries, which, if they do fail, will need supplies, and must look mainly to us to furnish them.

These are our opinions and the grounds of them. But every reader owes to himself even more than to us, to examine them well for himself, and not to act upon them unless he is fully satisfied of their correctness. If we thought that our opinions were to guide the farmer we would be very chary of expressing them generally, and would perhaps be absolutely silent, if we could suppose that by taking our advice without proper reflection on his own part, he should make us wholly responsible for the amount of his revenue.

PREMIUMS BY INDIVIDUAL DONORS.

The following letter of Dr. R. T. Baldwin, of Winchester, offering premiums on three subjects of very important, practical and scientific interest, explains itself.

We are authorized also to state in regard to that class of premiums, that the premium of \$100 for the best essay on the connection of moral and agricultural improvement, and their reciprocal operation and effects, is again offered as before, with the exception of a slight change in the committee, which will be announced in the proper place:

WINCHESTER, June 13, 1855.

DEAR SIR:—In accordance with the rules and regulations of the Virginia Agricultural Society in relation to premiums offered by individual donors, I offer the following premiums:

1. A premium of one hundred dollars for any fact or facts derived from experiment, which prove conclusively that "woody fibre in a state of decay is the substance called humus."

2. A premium of one hundred dollars for any fact or facts, derived from experiment or observation, which prove satisfactorily that any substance whatever possesses the fertilizing qualities of manure, except the residue of putrefaction.

3. A premium of one hundred dollars for any fact or facts, derived from experiment, which prove that the surface of the earth itself is incapable of experiencing the putrefactive process.

The awards to be made at the November meeting of the Society, 1856. Yours, &c.,

R. T. BALDWIN.

HOW TO MOVE A SULLEN OX.

"Did you never observe," said a plain man, a friend of ours, a few days since, as we were driving a dog out of the cow-pen, to prevent his taking refuge behind us—as the cows took it by turns to chase him over the lot—"did you never observe that a cow never will make friends with a dog?" "Often." "Well, the best way you ever tried to make steers rise when they get sullen, and lie down, is just to bring a dog and drop him down on them. It will make them jump up when nothing else in the world will." We seized the hint at once for the benefit of our friends who own such pests as obstinate oxen, and give it to them now.—We believe there is no antipathy so universal and inveterate as that of cattle against dogs, and it strikes us that when all other means fail, that will answer.

NEW PAPER ENTERPRISE.

It will be seen in our advertising columns that Mr. Graeme, of this city, long connected with the newspaper press of this city, proposes to publish a newspaper mainly devoted to commercial and statistical subjects.

LANDSCAPE GARDENING.

Mr. E. G. Eggeling proposes to visit the upper country this summer, and on his tour will be glad to give his assistance to those wishing to improve their homesteads. To all such we recommend him with pleasure as just the man they want, and very moderate in his charges.

CULTIVATION OF FRUIT.

To the Editor of the Planter:

SIR—As you are aware, I have been for several years past, a devoted cultivator of fruits and fruit trees. It is with pleasure that I witness the interest taken in this branch of husbandry, and the columns of the Planter occasionally graced by the communications of friends to the cause, able and willing to impart instruction. I hope those correspondents will not look back, now they have put forth their hands to the plough. There are many points in fruit culture not yet settled even by scientific cultivators, and theories and practice are variant. Let us compare notes, let us commune freely, let us give our several modes of cultivation, and by all means, endeavor to ascertain what varieties are best adapted to our soil and climate, and rid our orchards of the worthless sorts with which many are now filled. There are several large nursery establishments eminently deserving patronage, in addition to those enumerated in the February number of the Planter, by my friend, Captain Henry B. Jones, of Rockbridge; of which I shall merely mention that of Mr. Oliver Taylor, of Loudon county. There is no difficulty now in getting *home raised* trees of the best quality and of varieties corresponding with the present improved state of fruit culture. A few years ago this part of the State was overrun by tree pedlars and grafters. Those who patronized them are now reaping the harvest of their impositions. Their trees were generally the refuse of Northern nurseries, and if of suitable varieties for cultivation here, were stunted, badly treated, hauled in open waggons with the roots exposed to all the vicissitudes of the weather during a long journey. One person bought two hundred peach trees, under assurance that they contained all the finer varieties from the earliest to the latest. After planting and nursing them for several years they came into bearing, and it was then found that all were of one sort, ripening at the same time. Other impostors have traversed the country, professing to have grafts of the most celebrated apples, which by putting on old trees would soon come into bearing, and strange to say, many farmers patronized them, and their orchards were ruined. It is now apparent that they carried grafts from one farm to another, and often grafted a tree with its own sort. These are *Yankee tricks*, and as long as our people think

—"the pleasure is as great
Of being cheated, as to cheat,"

we shall not have an end of such impositions. Nurserymen, in general, have too much work at home to allow them to travel and dispose of their trees. They generally advertise, and furnish catalogues and information to their customers, and this is as much as can be expected. There are establishments at the North that may be characterized as *tree manufactories*. They are root grafted—

small pieces of roots being used, and the tree looks very well while young, but when transplanted they do not strike root freely, and they soon become worthless. A thrifty, good apple or pear tree can only be had when grafted or budded upon an entire plant whose tap root has been shortened; it then will send out lateral roots and make a good tree. There are also nurseries at the North where there is honest dealing and good trees. When I commenced planting apple trees in March, 1845, not knowing of any nurseries in the State, I had to send to Newark, N. J., for what I could not obtain in Washington. I continued for the next two years to plant from the nurseries at that place, and better bearers or more thrifty trees I have never seen here or elsewhere. I was awarded at the first Annual Fair of the State Agricultural Society, the premium for the largest and best variety of apples, and if I attend this year, he who takes the premium over me will deserve it. I am collecting the finer varieties of Virginia apples, and there are a great many fine ones, mostly natural seedlings, which have a local popularity, and I wish to bring them together and compare them with my Northern varieties. I should be happy to receive information of the best local varieties, and will exchange grafts with any orchardist or nurseryman in the State. I raise my stocks from the seeds of the Denizen apple, which I am told is a native of this county, and is only a good cider apple, but the trees are remarkable for their vigorous growth and longevity. I have nearly one hundred varieties, Northern and Southern, under experiment, and in the course of ten years I hope to be able to decide which are the best varieties for general cultivation.

Your correspondent S., whose acquaintance I doubtless made at Richmond in 1843, publishes a recipe which he recommends as a remedy for the peach worm. I think, however, if he applies this remedy extensively, he will find that it will not interfere much with the worm; but as his prescription imparts nitric acid and potash, chlorine and soda to the soil, the vigor of his trees will be promoted, and the effects of the worm overcome. The simplest and best remedy that I have used to destroy the worm is scalding water. For this purpose, I have a small furnace, which I take by hand through the orchard; when I find where the worms have colonized, I heat a tea kettle of water over a charcoal fire, make a basin like cavity with earth around the collar of the tree, and pour in the boiling water. A little salt and tobacco may be added. The application should never be made in freezing weather, but in the spring or summer; it does not in the least injure the tree; in fact it will restore its health and luxuriant growth.

I have never seen a single case of the "yellows" in this State, and what is termed so with us will, without doubt, prove to be starvation. A neglected tree on exhausted soil will linger for a year or two, inviting, as all diseased trees do, insects and other enemies, and finally die, but not of the yellows; that is a very different disease, often attacking a whole orchard under good culture. To keep this dreadful malady from extending within our borders, should be a leading consideration with every fruit culturist. With care it can be done. Let nurserymen never raise two crops of trees in succession on the same ground. They should plant no kernels except from hardy, healthy young seedling trees, and never from a yellow variety.

The yellow peaches are more liable to over-bearing and to disease than the pale-fleshed sorts, and indeed it would be to the interest of the peach grower to discontinue planting yellow peaches as much as possible. If it be desirable to keep a few for the sake of number and variety, the following are the best, having regard to the excellence of the fruit and habit of the trees. *Free-stones*: Crawford's Early, Crawford's Late, Yellow Rareripe, Smock. *Cling-stones*: Kennedy's Carolina, or Lemon Cling-stones, Tippecanoe, and Algiers, or Yellow Preserving. To these, for a good collection, may be added: *Pale-fleshed*—*Free-stones*: Walter's Early, Coles Early, Chancellor, Oldmixon-free, Large Early York, Grosse Mignonne, or Royal Kensington, La Grange, President. *Cling-stones*: Old Newington, Oldmixon, Rodman's Red, Heath.

The Columbia, sometimes called the Georgia peach, and in that State the Indian peach, is a slow growing, long lived variety, and deserves a place in every collection. There are other peaches of merit, such as the Early Tillotson, Druid Hill, Morris Red Rareripe, Haines' Early and George IV, (if true,) which may be cultivated as market peaches. Out of upwards of fifty varieties by name in my orchards, the above are all that I think really worthy of general cultivation. Those that I omit to mention, though good, ripen with the above and have no special quality to recommend them. In our genial soil and climate the peach is so easily raised, and all are so fine that it is a hard task to say what should be excluded from an orchard. I can name but three which I would condemn to banishment, viz: Red Cheek Melocoton, Morris' White, and Kenrick's Heath; and yet these are popular market fruits. There are many accidental seedlings, having a local popularity and fanciful names, to be found on some catalogues, but I cannot say that it would be desirable to extend their cultivation. I have raised several myself, slightly varying from the parent tree, but while we keep the originals free from deterioration there seems to be very little propriety in bringing forward a brood of seedlings. The peach obeys the same general law that influence all other vegetables. If fertilized by the pollen of another variety we may expect a cross breed, yet in a majority of cases there will be a decline in the merits of the fruits. Winds and insects scatter the pollen of the peach, as is done with different varieties of corn, melons and other annual plants growing in close proximity, causing them to mix. It can be artificially performed, as was done by Mr. Knight, President of the London Horticultural Society, to whose skill in cross budding we are indebted for some of our best fruits. There are some varieties of peaches, the Columbia, Oldmixon Cling and the Heath, in particular, whose individual character is so strongly impressed upon them that they appear to refuse a union with others, and hence they will in a majority of cases reproduce themselves from their own kernels. The Heath has been in my father's family for more than sixty years, grown all the time from the seed. In Georgia, Tennessee and Arkansas, where he cultivated it, it is called the "English peach," from the circumstance that Col. Hamilton, who is mentioned in Lee's memoirs as an officer in the revolutionary war, and afterwards Consul at Norfolk, having brought stones of this peach from Scotland, distributed them among his

old neighbors in Caswell or Person County, North Carolina, where he had been a merchant previous to the war. Coxe ascribes the introduction of this peach from the Mediterranean to a Mr. Heath. The two peaches are identically the same, and its constant habit of reproducing itself without variation, proves its universal popularity, and tends to confirm the history of its appearance in this country at two points remote from each other. A seedling Heath makes the best stock for budding of any of our fine varieties. There can be no good object attained by relying alone on seedlings for an orchard. The uncertainty of getting good fruit ripening in succession throughout the season, should deter any person from attempting it when our nurseries contain so many fine varieties, such well grown trees, and so *very cheap*.

I find, Mr. Editor, that this communication is much longer than I had intended. I wished to speak more of the apple, my mode of planting and cultivation, and the theory on which my practice is founded. But this I must defer until some other time, if you can find room for me in the Planter.

WOODFORD,
Near Falls Church P. O. }
Fairfax County, Va. }
June 17, 1855.

H. C. WILLIAMS.

CAPILLARY ATTRACTION OF THE SOIL.

From numerous observations which have been made at different times on the peculiar appearance of the surface of soils, clays, &c., during the warm summer months, and the fact that they, when covered with boards, stones, or other materials, so as to prevent them from supporting vegetation, become in a comparatively short time, much more productive than the adjacent uncovered soil, led to the belief that the soil possessed some power within itself, aside from the roots of plants—of elevating soluble materials from deep sources to the surface.

Dr. Alexander H. Stevens, of New York, was, I think, the first to suggest this idea. He speaks of it in his address delivered before the State Agricultural Society of New York, on the *Food of Plants*, in January, 1848. No accurate experiments were performed, however, to fix it with a degree of certainty, till those made which appear in this paper.

To throw some light upon the subject, in May, 1852, I sunk three boxes into the soil—one 40 inches deep, another 28 inches deep, and a third 14 inches deep. All three of the boxes were 16 inches square. I then placed in the bottom of each box three pounds of sulphate of magnesia. The soil was to be placed in the boxes above the sulphate of magnesia, was then thoroughly mixed, so as to be uniform throughout. The boxes were then filled with it. This was done on the 25th of May, 1852. After the boxes were filled, a sample of the soil was taken from each box, and the per centage of magnesia which it contained, accurately determined. On the 28th of June, another sample of surface soil was taken from each box, and the per centage of magnesia carefully obtained as before. The result in each case pointed out clearly a marked increase of magnesia.

On the 17th of July, a sample of the surface soil was taken for a third time from each box, and carefully examined for the magnesia. Its per centage was found to be very perceptibly greater than on the 28th of the preceding month. On the

15th of the months of August and September following, similar examinations severally were made, with the same evident gradual increase of the magnesia in the surface soil.

The following are the results as obtained:

	Box 40 in. high.	Box 28 in. high.	Box 16 in. high.
Per centage of Magnesia:			
May 25th,	0.18	0.18	0.18
June 28th,	0.55	0.30	0.32
July 17th,	0.52	0.46	0.47
Aug. 15th,	0.47	0.53	0.54
Sept. 15th,	0.51	0.58	0.61

Before the middle of October, when it was intended to make another observation, the fall rains and frosts had commenced; on this account the observations were discontinued. The elevation of the magnesia, as shown in the above experiments, evidently depends upon a well known and quite universal property of matter, viz:—the attraction of solids and liquids, or what is commonly denominated capillary attraction, or the property which most liquids have to rise in tubes, or between plane and curved surfaces. This may be clearly illustrated by taking a series of small capillary glass tubes and insert one extremity of them in a solution of sulphate of magnesia, or chloride ammonium, and break or cut off the upper extremity, just below the height to which the solution rises. Expose them to the sun's rays. The water of the solution evaporates, and the fixed sulphate of magnesia will be deposited just on the upper extremity of the tube.

As the solution evaporates, more rises up from below, keeping the tubes constantly full. Yet no sulphate of magnesia passes off; it all, or nearly all remains at, or rises just above the evaporating surface. Just so in the soil; as the water, evaporates from the surface, more water pregnant with soluble materials from below, rises up to supply its place; as this evaporation goes on, it leaves the fixed materials behind in the surface soil at the several points of evaporation.

This explains why we often find during the months of July, August and September, a crust of soluble salts covering the surface of clay deposits which are highly impregnated with the alkalies or any of the soluble compounds of the metals, earth, or alkaline earths. Also, the reason, in many instances, of the incrustations upon rocks that are porous and contain soluble materials. It also helps to explain the reason why manures when applied for a short or longer time upon the surface of soils, penetrate to so slight a depth. Every agriculturist is acquainted with the fact that the soil directly under his barn-yard, two feet below the surface, (that is any soil of any ordinary fineness) is quite as poor as that covered with boards or otherwise, two feet below the surface, in his meadow; the former having been for years directly under a manure heap, while the latter, perhaps, has never had barnyard manure within many rods of it.

The former has really been sending its soluble materials to the surface soil, the latter to the surface soil and the vegetation grown near; or upon it, if uncovered.

The capillary attraction must vary very much in different soils; that is, some have the power of elevating soluble materials to the surface from much deeper sources than others. The pores or interstices in the soil correspond to capillary tubes. The

less the diameter of the pores or tubes, the higher the materials are elevated. Hence one very important consideration to the agriculturist, when he wishes nature to aid him in keeping his soil fertile—is to secure soil in a fine state of mechanical division and of a high retentive nature. Nothing is more common than to see certain soils retain their fertility with annual addition of much less manure than certain others. In fact, a given quantity of manure on the former, will seem to maintain their fertility for several years, while a similar addition to the latter quite loses its good effects in a single season. The former soils have invariably the rocks, minerals, &c., which compose them, in a fine state of division; while the latter have their particles more or less sandy and coarse.—S. M. SALISBURY, M. D., in *Prairie Farmer*.

PUMPKINS AND SQUASHES.

We know of no vegetable genus in which there is so much confusion of names and characters among cultivators, as the Pumpkin and Squash tribe, or *Cucurbita* of Botanists. Their common name have so multiplied, that a farmer wishing to grow some for his stock, or his table, can hardly tell what to ask for at the seed stores, or what will be the character of his crops when obtained.

Knowing that T. W. Harris, the distinguished Entomologist of Massachusetts, had been paying special attention to this subject, with the view of some reliable and scientific classification, we addressed him the following queries, to which he has most kindly responded:

To the Editor of the Farm Journal:—In your communication, you request to be informed what is "the distinction, if any, between the Boston and Vegetable Marrow Squash, also between the Connecticut Field Pumpkin and the cheese Pumpkin; what is the Valparaiso Squash, and is it a desirable variety; what are the distinctive marks of the Winter and Summer Crook-neck Squash, Early Egg or Apple Squash, Pattypan Squash, Turban Squash, Cashaw Pumpkin, Mammoth Pumpkin, Acorn Squash; what are the correct names and synonyms of these kinds; which of them is most valued in New England for pumpkin pies, and which for stock and field culture?"

In September, 1834, Mr. John M. Ives, of Salem, Mass., exhibited in Faneuil Hall, Boston, a new squash, to which he subsequently gave the name of the "Autumnal Marrow Squash." It was figured and described in Fessenden's New England Farmer, vol. XIII, No. 16, Oct. 29, 1834, page 122, and again in Fessenden and Teshemacher's Horticultural Register, vol. I, No. 3, March, 1835, page 93. This fruit thus introduced and brought into notice, soon became a great favorite, and has ever since been extensively cultivated for table use, as a sauce and for pies, in the vicinity of Boston. So popular has it become in the market of Boston that it may be well be called "the Boston Squash," though I never heard that name applied to it.—Mr. Ives, in his description of it, called it a variety of *Cucurbita melopepo*, which is an error. If not a mere variety of Commodore Porter's Valparaiso Squash, it doubtless descended from the same stock as the latter. It must not be confounded with the kind cultivated in England under the name of "Vegetable Marrow," a very poor vegetable, as I am assured by friends who have eaten it in London, and apparently one of the sorts which in New

England would be called Summer Squashes. The "Autumnal Marrow" is eaten only when fully ripe; the "Vegetable Marrow," like your "Cymplings," is eaten only in unripe state. The former comes into eating in September, but may be kept with care till March. When pure or unmixed by crossing with other kinds, it is considered as the very best autumnal and winter squash in New England.—Many cultivators have allowed it to degenerate or become mixed with the larger and grosser Valparaiso, so that we do not often find it in entire purity in our markets. It generally has only three double rows of seeds. For a description of it, see the works before cited, also Cole's New England Farmer, vol. I, No. 12, May 26, 1849, p. 185.

I am not sure what is the fruit denominated Connecticut Field Pumpkin, and the Cheese Pumpkin is unknown to me except by its name in catalogues.

The Valparaiso Squashes, of which there seem to be several varieties, known to cultivators by many different names, some of them merely local in their application, belong to a peculiar group of the genus *Cucurbita*, the distinguishing characters of which have not been fully described by botanists. The word squash as applied to these fruits is a misnomer, as may be shown hereafter; it would be well to drop it entirely, and to call the fruits of this group pompions, pumpkins, or potirons. It is my belief that they were originally indigenous to the tropical and subtropical parts of the western coast of America; they are extensively cultivated from Chili to California, and also in the West Indies, whence enormous specimens are sometimes brought to the Atlantic States. How much soever these Valparaiso pumpkins may differ in form, size, color, and quality, they all agree in certain peculiarities that are found in no other species or varieties of *Cucurbita*. Their leaves are never deeply lobed like those of other pumpkins and squashes, but are more or less five-angled, or almost rounded, and heart shaped at base; they are also softer than those of other pumpkins and squashes. The summit or blossom-end of the fruit has a nipple-like projection upon it, consisting of the permanent fleshy stile. The fruit-stalk is short, nearly cylindrical, never deeply five-furrowed, but merely longitudinally striated or wrinkled, and never clavated or enlarged with projecting angles next to the fruit. With few exceptions, they contain four or five double row of seeds. To this group belong Mr. Ives' Autumnal Marrow squash (or pumpkin) before named, Commodore Porter's Valparaiso squash (pumpkin), the so-called Mammoth pumpkin or *Cucurbita maxima* of the botanists, the Turban squash or Acorn squash, *Cucurbita piliformis* of Duchesne, the Cashew pumpkin, Cole's Connecticut pie squash, Stetson's Cuba squash, and his hybrid called the Wilder squash, with various others.

The variety introduced from Valparaiso by Commodore Porter, became known to me about the year 1830, since which time it has been more or less cultivated in New England both for the table and for stock. It is of an oblong, oval shape, of a pale reddish yellow color externally when ripe, nearly smooth, and very slightly furrowed, and often grows to a large size. It readily mixes with the Autumnal Marrow, but is inferior to it in quality. It may prove better and more valuable in the Middle and Southern States than in New England.

The Turban, sometimes called also the Acorn squash, because when the fruit is small it resembles somewhat an acorn in its cup, seems to be the *Cucurbita piliiformis* of Duchesne. The middle lower figure of the group on page 283 of the volume on "Timber Trees and Fruits," in the "Library of Entertaining Knowledge," seems intended for the Turban squash. It sometimes grows to a large size, measuring 14 or 15 inches, in transverse diameter, and looks like an immense Turkish turban in shape. Specimens raised in my garden in 1851 were little more than ten inches in diameter, and weighed ten pounds or more, having very thick and firm flesh, and but a small cavity within. They proved excellent for table use, equal in quality to the best Autumnal Marrows. They keep quite as well as the latter.

The earliest account of the Cashew pumpkin that has fallen under our notice is contained in the English translation of Du Pratz's History of Louisiana, (vol. II, p. 8,) where it is called *Cushaw*. In the original French work, the name given to it is *Gironon*. Du Pratz described two varieties; one round, and the other curved, or of the shape of a hunter's horn. The latter was considered the best. The Cushaw or Cashew pumpkin is not cultivated or much known in New England. I raised some specimens of the crook-necked variety, (which has only three double rows of seeds), a few years ago, from seeds received from New Jersey. They did not ripen well, and many of them rotted before half ripe. They are evidently too tender for a New England climate. From the account given of them by Du Pratz, they seem well suited to Louisiana, where they are much esteemed. See his work.

The genuine Mammoth pumpkin, or true *Potiron* (*Cucurbita maxima*), may be considered as the typical species of this group, having rather soft, roundish heart-shaped, and entire leaves, a short cylindrical fruit stem, a permanent fleshy stile, and five carpels or double row of seeds. The form of the fruit is an oblate spheroid, depressed at the blossom and stem ends, and marked with ten or more wide meridional furrows. It sometimes grows to an immense size, two feet or more in diameter, and sixty pounds or more in weight, being light in proportion to its size, on account of the large hollow within. It is known to vary much in color and size, and somewhat in form. In some of its variations, it may have lost its original characteristic form, so far as to be no longer recognized. If this be true, Cole's Connecticut pie squash, the round Valparaiso squashes, and several others, may be merely varieties of the Mammoth pumpkin. To some of the varieties of this fruit the name *Gironon* or *Giraumont*, otherwise written *Giraumon* and *Giraumont* signifying a rolling mountain, seems originally to have been applied, in allusion to the form and size. French writers subsequently transferred this name to certain varieties of the *Cucurbita pepo*.

The plants of the foregoing Valparaiso, or *Potiron* group, are more tender and less hardy than those of the common pumpkin or *Pepo* group; they are also much more subject to the attacks of worms or borers (*Ageria cucurbitæ*) at the roots. Their fruits, compared with common pumpkins and winter squashes, have a thinner and more tender rind, and finer grained, sweeter, and less strongly flavored flesh, on which accounts they are preferred by most persons for table use.

The second group contains the common New England field pumpkin, Bell-shaped and Crook-necked Winter squashes, the Early Canada Winter squash, the Custard squash, and various others, all of which (whether rightly or not cannot now be determined,) have been generally referred by botanists to the *Cucurbita pepo* of Linnæus. This group is readily to be distinguished from the first one by the following characters. The leaves are rough, and more or less deeply and acutely five-lobed. The fruit has only three carpels or double row of seeds, and the stile drops off with the blossom. The fruit stem is long, and clavated or enlarged next the fruit, where it spreads out into five claw-like projections; and is five-angled and deeply five-furrowed. The fruit is eaten only when fully ripe, and may be kept with care throughout the winter. The rind, though sometimes quite hard, never becomes a woody shell, and the flesh remains juicy and succulent till it rots, never drying up into a spongy or fibrous substance, in which respects these fruits differ from what are called Summer squashes. The seeds are not so broad, thick or plump, and white as those of the *potiron* group, but are smaller, thinner, and of a greyish color.

The common field pumpkin of New England, which formerly was extensively raised for stock, and is still used for the same purpose, and of which our pumpkin pies and pumpkin sauce were made, till the winter crook-neck and autumnal marrow came to be substituted therefor, has a form somewhat resembling that of the mammoth pumpkin, but its longitudinal often exceeds its transverse diameter, its color is of a deeper yellow or orange, the furrows on its surface not so deep or broad, and its rind much thicker, and in some varieties quite hard. Its flesh is rather coarse, of a deep orange yellow color, and of a peculiar strong odor. Baked pumpkin and milk, pumpkin suace, and dried pumpkin for winter use, have had their day, and gone out of fashion; and pumpkin pies are now mostly made of the autumnal marrow and crook-necked winter squashes, except by some of the old folks, who still prefer the pumpkins, baked in a milk-pan, and without any pastry.

The New England "crook-neck squash," as it is commonly but incorrectly called, is a kind of pumpkin, perhaps a genuine species, for it has preserved its identity to our certain knowledge ever since the year 1686, when it was described by Ray. It has the form and color of the Cashaw, but is easily distinguished therefrom by the want of a persistent stile, and by its clavated and furrowed fruit stem. Before the introduction of the Autumnal Marrow, it was raised in large quantities for table use during the winter, in preference to pumpkins, which it almost entirely superseded. Many farmers use it now instead of pumpkins for cattle; the vine being more productive, and the fruit containing much more nutriment in proportion to its size. It varies considerably in form and color. The best kinds are those which are very much curved, nearly as large at the stem as at the blossom end, and of a rich cream color. Some are green, variegated with cream colored stripes and spots. Some are bell-shaped, or with a very short and straight neck, and are less esteemed than the others; for the neck being solid and of fine texture, is the best part of the fruit. These crook-necks can be kept all winter, if not exposed to frost, and I have eaten of them when a year old. On account of its hardness, its fruitfulness, and its keeping

qualities, this is perhaps the most valuable variety to the New England farmer. It is said to degenerate in the Middle and Southern States, where probably Commodore Porter's Valparaiso or some kindred variety may be better adapted to the climate.

The Early Canada squash seems to be a precocious and dwarfed variety of the common crook-neck. It is smaller, with a short and often straight neck, and is of a dark and dirty buff color externally. It comes into eating early, quite as soon as the autumnal marrow, and was, indeed still is, much esteemed as a table vegetable.

The custard squash or pumpkin is an oblong, deeply furrowed, and prominently ten-ribbed fruit, with a pale buff and very hard (but not woody) rind, and fine, light yellow flesh, much esteemed in the making of pies and puddings. For a figure and description of it, see Cole's New England Farmer, Vol. III, No. 4, Feb. 15, 1851, page 59. From seeds received from Paris, under the name of Patagonian squash, I raised a fruit exactly like the custard squash in form and size, but of a dark green color externally and entirely worthless as an article of food. Nevertheless I infer that the custard squash is merely an improved variety from the same original stock.

The fruits belonging to this second group probably originated in the eastern and central parts of the two Americas. They were cultivated by the Indians, and were found here in their gardens and fields by Europeans on the first settlement of the country. Pumpkins, or bell-shaped squashes (as New Englanders would now call them), were found as far north as Saco, by Champlain, in 1605 and 1606. A similar variety was cultivated by the Iroquois Indians, and still bears their name in France. Pumpkins were found by Raleigh's Colony among the Indians in North Carolina, and by early voyagers in the West Indies. There are indigenous kinds in Brazil; and we have seen that even Patagonia has added another to the common stock. Cultivation has doubtless improved their qualities, and has caused them to sport in numerous varieties, so that it is now difficult, if not impossible, to determine which of the known kinds are typical species, and which are mere varieties.

A third group remains to be described. The representatives of it are the *Cucurbita Meloepo*, *verrucosa*, and *ovifera*, of Linnæus. It includes all those kinds called in New England Summer Squashes, because they are eaten only during the summer, while they are soft and tender, and in an unripe state. These are the only two Squashes, if regard be had to the origin of the name, derived from the language of the Massachusetts Indians, by whom, according to Roger Williams, this kind of fruit was called "*Askutasquash*, which the English from them call *Squashes*." From the same authority, and from other sources, we learn that the Indians of New England cultivated this kind of fruit or vegetable, and used it for food; that some of their squashes were "of the bigness of apples, of several colors," while others are represented by Champlain, as being considerably larger, turbinated, and more or less puckered on the margin, and of the same form as that which in France is called *Bonnet de pretre*, probably the prototype of our Scalloped Squash, or *Cucurbita melopepo*.—Bartram found a squash vine growing wild in the interior of East Florida, climbing to the tops of the trees, and bearing little yellow squashes of the

form and size of an orange. Mr. Nuttall informs us, that the warted squash, *Cucurbita verrucosa*, was "cultivated by the Indians of the Missouri to its sources." It has generally been supposed, on the authority of Linnæus, that the Egg Squash, *Cucurbita ovifera*, was a native of Astrachan in Tartary. On turning to the account given of it by Dr. Lorché, from whom Linnæus received his specimens, I find it included in a list of plants, not natives of the vicinity of Astrachan, but cultivated only in gardens, where it is associated with such exotics as Indian corn or maize, with which it was probably introduced directly or indirectly from America. We also learn from Lorché that this species varied in form, being sometimes pear-shaped; that it was sometimes variegated in color with green and white; and that the shell served instead of little boxes. Here we have plainly indicated the little gourd-like, hard-shelled, and variegated squashes, that are often cultivated as ornamental plants. For further account of the Squashes of the North American Indians, Wood's "New England Prospect," Josselyn's "Rarities," and Vander Donck's "Description of the New Netherlands," may be consulted. From these and similar authorities, we conclude that Summer Squashes were originally natives of America, where so many of them were found in use by the Indians, when the country began to be settled by Europeans.

The Summer Squashes, like the plants belonging to the second group, have acutely five-lobed, rough leaves, and large yellow flowers, a clavated five-angled and five-furrowed fruit stem, and a deciduous stile. Their seeds also resemble those of common pumpkins and winter squashes, but are smaller and thinner; some of them are runners and climbers, others have a dwarf erect habit, and hence are sometimes called "bush squashes."—They differ from all the foregoing kinds in having when ripe a hard and woody rind or shell to the fruit, with a slimy and fibrous pulp, which when dry becomes a mere stringy and spongy mass.—Hence, these fruits are only eaten while they still remain tender and succulent, and never in a ripe state. On account of their woody shells, they are sometimes mistaken for and miscalled *gourds*, from which they are not only distinguished by their oval and thin seeds, but by the largeness and yellow color of their flowers, those of gourds being smaller and white, and by their deeply lobed and rough leaves, those of gourds being entire, or at most only slightly angular and downy.

Under the name of *Cucurbita melopepo* is to be included what in New England is called Scalloped Squash, and in the Middle and Southern States, Cymplings; perhaps the Patty-pan Squash is another synonyme for the same. This *melopepo* is a very broad and thin or compressed fruit, with scalloped edges, and more or less warted surface; it measures often ten or eleven inches in transverse diameter, and three to four from stem to blossom. It varies in form, being sometimes much thicker, and more or less turbinated or top shaped, when it takes the name of *Bonnet de pretre* or priest's cap; perhaps this is really its original form. Other varieties nearly round, are sometimes seen.

The *Cucurbita verrucosa* is the cucumber-shaped warted squash, generally with a slightly curved neck. In the West Indies there is a much larger oblong, ovoid squash, with a somewhat warted surface, which is also referred to the *Cucurbita verru-*

cosa. Intermediate between these, there is another which may be described as pestle-shaped, measuring ten inches or more in length, and quite smooth on the surface. These two kinds, namely the *Cucurbita melopepo* and *C. verrucosa*, with all their varieties, are generally of a dwarf habit, with erect stems.

Cucurbita ovifera, with its varieties, *aurantiaca*, the Orange or Apple squash, and the *pyriformis* or pear-shaped and variegated squashes, has a running or climbing stem. Some of the orange squashes are the very best of the summer squashes for table use, far superior either to the scalloped or warted squashes.

The Vegetable Marrow, as it is called in England, has been considered by botanists as a variety of the *Cucurbita ovifera* of Linnaeus; if this be correct, cultivation has forced it to a most unnatural size, and has greatly changed its original form.

T. W. HARRIS.

For the Southern Planter.

At a meeting of the State Agricultural Society of Virginia in November, 1854, a committee was appointed to ascertain if by the aid of the friends of this Society, Agricultural Professorships could not be established at one or more of our Literary Institutions.

Should this arrangement be made, a large portion of these funds will be thus absorbed. With many of my brother farmers, I think a more judicious investment may be made of any surplus which shall exist. Virginia derives from her agriculturists much the larger portion of her revenue; the farmers have an undoubted right to have established at her colleges, and at her Military Institute, agricultural education, embracing scientific lectures and practical experiments. Her agriculturists have a right to require that her seats of learning shall offer to their sons facilities for attaining such knowledge as their avocation may require, so far at least as such means can accomplish this object. Why, of all classes alone, should the farmers be expected to contribute especially to the establishment of those chairs at our University and Institutes, which are connected with their particular employment? Would it not be as reasonable that the professional gentlemen of our State should, by their individual contributions, support the particular lecturers on whom their sons attend? If at our colleges such an education as may prepare the lawyer or the physician for the duties of after life, be accessible to these, and very properly so too, why should not the same institutions afford to the farmer's sons agricultural education upon terms equally easy? The subject has been long, far too long, neglected; but the period has arrived when if this abuse continue, it will be from the supineness of the farmers themselves. They have in their own hands the remedy; let them promptly apply it. No one who saw the numbers, and observed the intelligence and general bearing of the representatives of the agricultural interest of Virginia in Richmond last fall, can doubt the influence of this class. Let the agriculturists of the State call upon the Legislature to establish, under competent professors, at her different literary institutions, such courses of lectures, agricultural and veterinary, as the wants of the State may demand, and as the friends of the previous proposition may require. The call will, I imagine, be quickly responded to.

I alluded above to an investment which I thought would be more judicious. It is to purchase for the use of the members, with the surplus funds of the Society, such superior stock animals, stallions, jacks, bulls, boars, rams—such seed grains and grass seeds, implements of husbandry, &c., &c., as in the wisdom of the Executive Committee, and of a committee of two or more gentlemen, members of the Society, may most conduce to the prosperity of the "Old State." This latter committee might be appointed by the Executive Committee for the purpose of purchasing these animals, &c. Let these animals, &c., be distributed by the Executive Committee, or by a committee elected for the purpose, throughout the four great divisions of the State, the animals all to be exhibited every fall at our State Fair as Society animals; not for premiums of course. The details of this scheme I leave to the wisdom of the Society. In a future communication I may enlarge upon some of the advantages which it appears to me to possess.

A VALLEY FARMER.

GAS TAR FOR SEED CORN.—REMEDY FOR SMUT IN WHEAT.

NEAR EASTON, MD., April, 1855.

To the Editor of the Southern Planter.

DEAR SIR—I enclose one dollar for subscription for the present year.

In reference to the use of gas tar on seed corn, I take occasion to say, that I have used it with good effect as against blackbirds. It is not unlikely, that its power in causing the absence of insects from the corn-hill does indirectly as much towards preventing injury from birds, as is done by a positive dislike of the latter for the tar.

It will be well to exercise care in its use, as my negroes have in several instances suffered from sore eyes and eruptions about the hands and face after handling the corn which had been coated with it.

The practice of your correspondent who puts his wheat into boiling water, reminds me of a fact lately stated by a farmer living in the "bay side" of Talbot county, a region which suffered severely from last summer's drought. He said, that in every instance within his observation, when the seed wheat had been moistened in the usual processes for preventing smut, it had vegetated earlier and had continued to grow better than where it had been sown dry, and that on his own farm he had observed, where the wheat lay on the ground through the night, and was ploughed in early in the morning, the same thing had occurred. As a preventive of smut, I have no doubt the use of boiling water is good. We use here, with almost perfect effect, the Glauber's salts and lime recommended in the Farmer's Register 12 or 15 years ago. For convenience in measuring, say seven pints of the salts dissolved in seven gallons of fresh water; one peck of unslacked stone lime, slacked to powder by pouring on it about a gallon and a half of water; use these quantities upon every ten bushels of wheat, by first stirring in the salts while the grains are thoroughly wetted, then intermixing the newly slacked lime.

If I were to do as Mr. Ruffin has done in the case of marling versus sheep-sorrel, I could bring almost as many witnesses both to prove the un-

questionable fact for which he has been contending, and the thoroughly practical effect of Glauber's salts and lime versus smut. I might, in reference even to the latter case, provoke some editors of agricultural journals and some farmers of notoriety, to produce an account of facts (?) as beggarly, and an amount of conclusions as barren, as have been produced in reference to the former.

Very respectfully,
THOS. R. HOLLYDAY.

WHEAT TRADE.

To the Editor of the Mark Lane Express:

DEAR SIR—My last communication on the above important subject was dated the 20th September, 1864, at which period the uncertainty hanging over our prospects of a supply of wheat for the current year, was alleviated *only* by the conviction that our own crop, being unprecedentedly productive, would be sufficient for the year's consumption, whilst it would leave us nothing in reserve, except to the extent of what we should be able to import. It is probable that England has never been placed in so anomalous and critical a condition since the year 1800, in regard to the supply of bread-corn; for by the deficiency in the crop of 1853, and her utter inability to import a sufficient quantity from abroad to cover that deficiency, she was compelled to fall back upon, and *consume* to the extent of five millions quarters of the reserve stock, which is usually held over the harvest, to meet the contingency of a wet or damp season, which renders a mixture of old corn absolutely necessary in the manufacture of flour. Had the succeeding crop (1854) been also deficient, or even an ordinary average one, it is impossible to say what might have been the consequences, or to what height the price of wheat might have been run up. For not only should we have immediately felt the exhaustion of the usual reserves; but, as it turned out, we should have had no means whatever of relief. This will be sufficiently clear if we consider that our foreign resources have this season failed us to such an extent, that with an ordinary crop it would have been impossible to meet the consumption.

For instance, in the United States, from whence our importations amount upon the average to about 800,000 quarters, the price of wheat and flour is at this time higher than in London; and agents from thence are actually purchasing Spanish flour (to be shipped in Spain) on Mark Lane, for the New York market. From the Black Sea, too, our supplies are wholly cut off for at least the next three or four months, whether we have peace or a continuance of the war. From France and the European ports of the Mediterranean, with the exception of Spain, we have had little or no supply since harvest; and until the next crop, they will have enough to do to hold their own. The bulk of our imports of wheat, therefore, have come from Egypt, Spain and the Baltic ports: and to what have they amounted? Only 380,000 quarters in the six months from the 5th of September, 1864, to the 5th of March, 1865, against 3,100,000 quarters in the corresponding period of the previous season. This will tell, in some measure, what would have been the probable consequences to this kingdom of a deficient harvest; and we cannot be too thankful that such was not the case.

Be it observed, too, that this falling off in the foreign supply has not risen from lowness of price with us, or wholly on the contingency of war. In 1853-4, for instance, our high prices stimulated the export of wheat and flour from the United States to such a degree, that every barrel of the one, and bushel of the other, that could be conveyed to the seaboard, was shipped off to Europe. I suspected at the time that they were overdoing it, and would leave themselves too bare of stock; and such proved to be the case. A deficient harvest last year, found them totally unprepared, and the consequence is that flour is at this present time 10s. per barrel higher at New York than it is here; so that we can look for no further supplies from thence this season; and what is more, our Canadian supply is diverted to the United States as the best market. So that the whole of North America is, in respect to a supply of wheat or flour, as effectually shut against us as if we were at war with that continent.

And with respect to the Baltic ports, the same may, to a certain extent, be said of them; that the prices of last year in England and France stimulated export beyond its natural limits, to the exhaustion of the stocks. This we learn by evidence from Rostock and other northern ports; and if we are just now obtaining a tolerable supply from thence, it is the accumulated stock brought down by land during the winter months, whilst the navigation was stopped. And the same communication informs us that they cannot send us much more after the present shipments are despatched, until another harvest, especially if the Russian prohibitory ukase is strictly enforced in every part of that empire; otherwise we might expect a supply to reach Dantzic, Stettin, and Rostock from Russian Poland, by the Vistula, and other rivers and their tributaries.

With regard to Spain, we are obtaining a small supply of wheat and flour from thence; but if we are to have the United States for a competitor, the quantity in future will be still more limited; whilst, however, our prices are so high, and only then, they will send us all they can spare, and probably something beyond it, unless a better market can be found for it. The difficulty in Spain—owing to the wretched state of the roads and the absence of canals and railways—in getting the produce to the seaboard, prevents them, in ordinary years, from exporting corn; so much, in fact, is the price of grain enhanced by the enormous expense of the transit by land, that, as I have before stated, the inhabitants of the coast find it more to their interest to import wheat and flour from the United States than to fetch it from Old Castile, where the first cost is frequently not more than 1s. 6d. per bushel. But when a high price can be obtained on importation, and then *only*, Spain can export a large quantity of wheat. We can, however, in the present instance, make no estimate whatever of the quantity to be obtained this season.

We must now turn to Egypt and her dependencies, from whence we may expect a considerable supply of wheat in a few weeks. In the Delta of the Nile they reap two harvests in the year; the first in March, and the second in September or October. The former is already over; and as the prices of Western Europe tempted the Egyptian farmers to sow more than usual, they will have a large quantity to export. On the other hand, the supplies from the Black Sea being cut off by the war, the Mediterranean islands, which depend upon

the hard wheats from the Russian ports of that sea, will now be competitors to a large extent with us for Egyptian wheat. This will apply also to Turkey, which derives a large quantity of wheat from South-eastern Russia when at peace, as well as from her own Danubian provinces. Upon referring back to my letter of the 17th August, 1853, I find that out of about nine million quarters of wheat shipped at Odessa in six years, above six millions were sent to the Mediterranean ports, including Constantinople; whilst only one-fourth of the entire quantity came to the United Kingdom direct, and the small remainder to Northern Europe. This supply is now wholly cut off, as well as that from the Danubian provinces; and Egypt is the only country in the East from whence we can look for any considerable supply.

Under all these circumstances, and looking at the small amounts of the imports the first six months of this season, I do not see how we shall be able to make up the year's importation beyond 2½ million quarters, which will be only sufficient to replace half the stock consumed last year, and will consequently leave us minus 2½ millions of the usual stock of old wheat on the eve of harvest.—And this will be further reduced by the lateness of the season, it being almost certain that the harvest will be at least a fortnight or three weeks later than usual, which delay will be further increased from a week upwards by the shortening of the days. We must depend for this season's consumption, wholly upon our own produce of wheat, and shall have but little of any kind to begin upon the next. Whether the supplies will be brought forward to market regularly will depend in some degree upon the opinion entertained by the farmers of the probable continuance of the war; and whether *under any circumstances*, the price of wheat is likely to continue for any length of time at or near its present maximum. This, however, is a branch of the subject which must form the subject of a future letter.

Yours faithfully, S. C.
LONDON, May 26.

THE CHINCH BUG.

CHRISTY'S PRAIRIE, IND., May 26th, 1855.

MR. TUCKER—I send you a few specimens of the *corn fly*—the most destructive insect that has ever appeared in this part of the country. If they come to hand alive, I would advise you to keep them close prisoners; for they increase very rapidly, and you might have more of them on hand than you would desire.

I had purposed writing to you, to make some inquiry respecting this insect; supposing, of course, that it was well known through the country, and especially to editors of agricultural papers. I was told, however, a few days ago, by the Rev. T. Lowry, of Park County, that he had written to you on this subject, and was informed that it was the first time you had heard of the existence of such an insect. The name he gave it, if I mistake not, was the *corn chinch*, the same that it has sometimes been called by here. In North Carolina, where it is said to have existed many years, I am told that it is called the *chinch bug*. But I would consider no name more appropriate than the one I have given it, the *corn fly*, as it is properly a fly, not a bug; and commits its ravages on all kinds of corn that grow here, wheat, rye and oats, as well

as maize. It also attacks some of the more succulent grasses, particularly the annuals.

In the latter part of May, it commences breeding. At what precise time the young swarms may first be seen alive, I am not able to say, nor can I tell whether they are produced in successive swarms, through the season, or not, but judging from the myriads that appear soon after wheat harvest and the apparently regular increase of their numbers, as they spread over large fields of maize, especially in dry seasons, it seems probable that they are produced in regular succession through the entire season.

The first time they were ever observed in this vicinity, so far as I have been able to ascertain, was nine years ago last summer. They were seen in a corn field, about three miles from this place. They appeared to come from the stubble of a wheat field that bordered on the corn. They did but little damage. A few successive days of rainy weather put a stop to their progress, and nothing more was seen of them, that season. Two years later, they appeared on the farm of one of my neighbours, about half a mile distant. They came apparently, as before, from wheat stubble, though none had been observed in the wheat while growing; and they began on that part of the corn adjacent to it. But few appeared at this time, and not much damage was done. In 1851, I observed them for the first time, on the farm where I now reside. The field in which they made their appearance had corn on one side and oats on the opposite side, with a strip of wheat between. They were seen immediately after the wheat was cut, on the rows of corn next to the stubble; and were so numerous, as to cover from one fourth to one half of the stalk, in many of the hills. The corn soon began to wither. They did not devour the solid parts of the plant, but pierced the outer part, or skin full of holes, or destroyed it in large patches, here and there, over the stalk, and appeared to feed on the juice. A few rows next to the wheat, were completely destroyed. The crop was more or less injured to the distance of about eight rods from the stubble. On the opposite side, the oats were killed to the distance of two or three rods from the wheat. The remainder ripened without injury.

They appeared again the next year, and about the same time of the year; but did little damage.

Strange to say, it had not yet entered my thoughts, that they had done, or could do, any damage to wheat. The next spring, (1853,) my wheat looked unusually promising. I knew the wheat fly was found in it the fall previous, and expected it would suffer some injury, but little expected it would have to encounter a more destructive enemy in connection with this. When it had grown to the height of a foot or more, I observed that more than half of it had stopped growing. This portion was only six or eight inches in height, and it grew no more, but withered and died; from what cause, I could not imagine. The same fly appeared again in the corn, after the wheat was cut. The rank growth of the corn, together with one or two heavy showers, prevented it from doing much injury.

Last summer, there was the same appearance in the wheat, as the summer previous. A part of it dwindled away, after it had grown to the height of a few inches. At the time of cutting the wheat, these insects were observed, in motion towards the corn, which was close by. In a few days, the

corn nearest to the stubble, was so covered with them, as to appear, at a little distance, as if covered with black paint. The corn was backward and dwarfish, and the season excessively dry, both of which circumstances favored their destructive effects. About fifteen acres of corn was destroyed by them. They swept over about forty acres more, some parts of which were nearly destroyed, others only slightly injured. One of my neighbours, had twenty-six acres of corn completely destroyed by them last summer, and fifty acres more greatly damaged. There was not a cornfield on the prairie, in which the crop was not greatly damaged. I do not know that they have ever been seen in this region, anywhere else than on the prairies, till last summer. Then, they were seen on farms formerly covered with timber, many miles distant from any prairie.

The attention of people here, was so thoroughly called to this insect, last summer, that when it appeared this spring, it was readily recognized. It was first observed on fences, or flying about, and alighting here and there, like other winged insects. Soon it was found about the roots of wheat,—then in oat fields, and in timothy grass. Wherever it has been seen among grain or grass, some of the blades were seen to turn yellow, and the growth to be checked, or stopped entirely; and in many cases, the whole plant completely killed. Probably, not less than one third of the wheat crop, in this vicinity has already been destroyed by them; and their destructive operations are still in progress.

The reasons why they have not before been observed in the early part of the season, are these.—In the first place, they have never before been so numerous in the spring season, as at present. And next, when in wheat they are usually partly or entirely concealed by the blades near the root; and would not be likely to be distinguished from other insects without close observation. E. C. SMITH.

Comments on the above

BY DR. A. FITCH.

MR. TUCKER—The facts which are embodied in the communication from Mr. Smith, of Indiana, are deeply interesting, and well merit insertion in your widely circulated publications, as they form a valuable addition to what is already upon record, respecting one of the most pernicious insects in our country. Some notices of this same insect, from correspondents in North Carolina, may be found in the early volumes of the Cultivator, and valuable articles relating to it, from the pens of Dr. Le Baron and others, may be met with in recent volumes of the Prairie Farmer. As the specimens in the quill, forwarded by Mr. Smith show, it is the same insect which, in an excursion through Northern Illinois, last autumn, I found in myriads, over a large district of country; and from all quarters, I received accounts of its destructiveness, of much the same purport as is given in Mr. Smith's communication. As soon as I obtain leisure, I will prepare a description and history of this important insect, for your readers; and therefore, I merely observe at present, that it is the insect which is generally known by the name of the CHINCH BUG—not Chintz, as the word is sometimes erroneously spelled. I have searched my library in vain for information as to the derivation and import of this word—Chinch. Webster supposes it to come from

the Latin name for a bug, *cimex*, through the Italian *cimice*, but this appears to me to be rather far-fetched and doubtful. In Dr. Hill's Decade of Curious Insects, published in 1773, a species of Thrips is described under the name of the Straw-colored Chinch. And if any one under whose eye these remarks fall, is sufficiently versed in philology to throw any light upon the origin of this word, we shall be happy to have him do so; for, in connection with this insect, it has become current in our country, and will thus be perpetuated.

Though the name Chinch bug is generally applied to this insect, it has obtained other names in particular localities. All over North-Western Illinois, they have been called Mormon lice, in consequence of their having come into that section about the same time that the self-styled Latter-day Saints commenced their settlement at Nauvoo, many ignorant people firmly believing they were introduced there by these deluded fanatics. And it appears from Mr. Smith's letter, that in his vicinity, this insect is called the Corn fly. This name, however, Mr. Smith himself will be aware, when he reflects further, is by no means so appropriate for this insect, as he supposed at the moment of writing. The name "fly" properly belongs only to insects with clear and glass-like wings, like the common house-fly; while the name "bug," although it is in this country currently applied to almost all insects, strictly belongs only to those which pertain to the Order *Hemiptera*, which embraces all those flat-backed insects which have a slender, sharp-pointed beak, for puncturing and sucking the fluids of those plants or animals which they infest—such insects as the common squash or pumpkin bug, and that disgusting object which at one time and another has obtruded itself upon the notice of every person in our land, the bed-bug. The species under consideration, moreover, exhales the same disagreeable odor which is peculiar to the insects of this group. There can, therefore, be no more appropriate name for it, than that by which it has been so long and so widely known—that of *Chinch Bug*.

This insect was first scientifically described by Mr. Say, in a pamphlet upon North American insects of this order, published at New Harmony, Indiana, in 1831. He described it under the name of *Lygaeus leucopterus*, i. e., the white-winged *Lygaeus*. Since that time the genus *Lygaeus* has been cut up into quite a number of new genera, and I not aware that it has ever been published, to which of these our insect pertains. It belongs to the genus *Micropus*, proposed by the French entomologist, M. Spinola, in his Essay upon Hemipterous Insects, published in 1840, page 218. This name, derived from a couple of Greek words, meaning *small-footed*, has allusion to the legs of these insects, which are not long and slender, and the hind pair in particular are no longer than the others, contrary to what is generally the case in the insects of this group. *Micropus leucopterus*, therefore, is now the correct technical name of the Chinch bug.

It is a singular fact, and one which shows that the science of entomology is of almost endless extent, that in those parts of Europe, where for several generations a host of collectors and men of science have been assiduously engaged in gathering and describing every insect which those countries contain, new species continue to turn up almost every year. Even in the environs of the city of Paris, which may be regarded as the head

quarters of this science, and where almost every inch of the ground has often been examined with the greatest care and the most searching scrutiny, my esteemed friend and correspondent, Dr. Signoret, has recently discovered a new insect, which, from the specimens he has been so kind as to send me, I find to be almost identical with the chinch bug of this country. This species he proposes to name the *Micropus Spinola*, in honor of the distinguished entomologist who founded the genus to which it pertains, and who has done so much to elucidate this important Order of insects. In view of such facts, who can refrain from devoutly exclaiming with the inspired Psalmist, "How manifold are thy works, O Lord!" And what an amount of close observation and patient, persevering research will it require to render our knowledge of the insects of our own country tolerably complete.

ASA FITCH.

June 4, 1855.

PEACHES.

This fruit has always found a large market in New York, and one which has encouraged the cultivation on a large scale. The soil of New Jersey seems to have been well suited to their growth, and very great quantities in ordinary years were thence exported. In some years the quantity was so great that they sold for fifty cents, or little more than the cost of their freight and baskets. In other years choice varieties have sold as high as \$5 and \$6 per basket. Last year the frosts of May cut off the whole crop—no good ones, and very poor ones were to be had at any price. The severe cold of the past winter has again proved destructive in many localities. In Connecticut, in the northern part of this State and at the West the crops have been cut off, and the trees killed out. In some parts of New Jersey the crops are good, and speculators are already seeking to forestall the markets. The growers, however, appear to be on their guard, since great numbers of orchards have been pulled out, the great uncertainty of the crops being a bar to its profits in the long run. The peach does not bear until its third year, and then alternate years for four years, seven years being the average life of the tree. The grower is fortunate if he gets in that time one crop that will pay. The usual distance of planting is 16½ feet apart—an acre holds 160 trees. For the first three years green crops may be planted among the trees. If the trees then bear a large crop, the prices will be so low that they will not pay to send to market. In the next year they may, as last year, fail altogether. The chances of profit are then that during four years the grower may have crops when they have failed elsewhere. If he does, it will reimburse his expense. At the end of seven years he pulls out the trees, which leaves his ground so utterly exhausted that a great expense is requisite to renovate it. These discouragements have greatly curtailed their culture.

ECONOMY IN FEEDING HORSES AND MULES.

When corn sells at a dollar and a quarter a bushel, a planter has pretty strong inducements to study economy in feeding his grain to his horses and mules. The writer has recently been experimenting a little in the way of testing the

relative value of *boiled* and *dry* corn for the nourishment of a working horse. The result is a gain by boiling varying from 20 to 25 per cent. We had rather feed four bushels of soaked and partly cooked corn than five bushels of the grain dry, particularly where one has very little hay, straw, blades, or other "roughness," to give with the corn.

It is well worth while to heat water boiling hot, and pour it over cut feed and ground grain to facilitate the extraction of their alimentary properties in the stomachs of working animals. It is not enough to fill the digestive apparatus with coarse forage, or the seeds of cereals, if we would secure the best attainable results for the food consumed. It must be so prepared as to yield up its life-sustaining virtues in a speedy and perfect manner. As a general thing, grain fed to horses is quite imperfectly digested; so much so, indeed, that not a few hogs and cows in and near villages and cities, subsist mainly on the droppings of horses that travel the streets.

Over 60 per cent. of corn is starch, which is insoluble in cold water, and not very soluble in juices of the stomach. By boiling or baking, starch is transformed into a kind of gum, which dissolves readily in water, and is easy of digestion. If grain keeps up to anything like its present market price it will soon be as common to bake bread for horses as for men. Unlike the ox, the horse has a small single stomach; and these is not one argument in favor of cooking food for persons that does not apply to its equal preparation for horses. Scotch farmers have been some years in the practice of baking bread for their plough teams when hard at work. It is soon eaten, agrees well with the stomach, and gives a fatigued animal the maximum or time to lie down on a good bed and rest. This kind of feed, designed to make good blood, and a plenty of it, does not supercede the necessity of cut hay, fodder, or straw, whose bulk is important for the due expansion, and vigorous action of the digestive organs.

Our practice is to boil corn some three or four hours, and salt it about as much as for hominy or bread. It swells to twice its original volume, which is no inconsiderable advantage. Horses fed mostly on green rye, barley, corn, clover, or lucerne, do best when a part of the water in such succulent plants is dried out before they are eaten. Even cows giving milk like half cured new hay better than perfectly green grass. A young corn plant two feet or so in height, has about 90 parts of water in 100 of its stem and leaves. This fact does not prevent its being nutritive at that early stage of its growth, for it has very little wood, or woody fibre, which is indigestible. Dry matured plants yield their nutrient elements sparingly to horses, as compared with oxen and other ruminants.

Corn alone is too heavy feed for both horses and oxen; and among the thousand and one inventions for crushing and grinding corn in the ear, we doubt whether there is anything equal to the "Little Giant Corn and Cob Mills," advertised by Messrs. Carmichael & Bean, in the pages of this journal. Lare experience in feeding corn and cob meal has demonstrated its economical value. The cobs do not yield any notable amount of positive sustenance, but they serve to render all nutritive elements in the corn available for the support of animal life, and when fodder is scarce, as it now is, crushed

cobs, if sound and not weathered, mix admirably with pure meal.

To work poor mules, oxen, and horses, or waste their expensive food, is bad economy; and one way to keep teams poor is to use dull, worthless ploughs and harrows, which require man and beast to go three times over a field to effect a degree of tillage which, with really good implements, might have been better done at one ploughing or harrowing. Every step in agriculture ought to tell; but it cannot, with bad tools, and badly kept working cattle and servants.—*Southern Cultivator*.

GREAT SALE OF SHORT HORNS IN ENGLAND.

Last week we noticed Mr. Tanqueray's sales of Short Horns, at Hendon, on the 24th of April. It would seem hardly possible, had we not facts and figures, that from a single herd there should be sold, at one time, 101 animals—consisting of 77 cows and heifers and 24 bulls—at an average price of nearly \$400 each. Some of the English journals attribute the high prices to American buyers who, they say, are getting away their best stock. They add, that we have the advantage of them in the associations formed here, by means of which the expense is divided, and the influence of superior animals more widely extended.

At the Hendon sale, however, the competition was chiefly between Messrs. Morris & Bear and Mr. Spencer, of New-York city, and Mr. Gunter, a young grazier of Brompton, England. Mr. Gunter obtained the highest price animal (500 guineas,) after which the American buyers seemed to have their own way, as they secured a majority of the best animals, and Mr. Gunter's name appears afterwards only as the purchaser of one of the bulls. However, Mr. G. now owns more of the Duchesses and Oxfords—the highest priced families of the Short Horns—than any other breeder in England, and English breeders now turn to him as being responsible for keeping at home any of these better animals.

[*Am. Agricult.*]

LABOR SAVING SOAP.—The wife of an American Agriculturist has been experimenting on soaps, and finds that the addition of three-quarters of an ounce of borax to a pound of soap, melted in without boiling, makes a saving of one-half the labor in washing, and improves the whiteness of the fabrics; besides, the usual caustic effect is removed, and the hands are left with a peculiarly soft and silky feeling, leaving nothing more to be desired by the most ambitious washerwoman.

For the Southern Planter.

A statement of the financial condition of the Virginia State Agricultural Society appears in the June number of the Southern Planter, and I wish to say through the same channel, that of the amount of commission to which I was entitled as General Agent of the Society, as set forth in that exhibit, there remained, after defraying the various expenses incurred by myself and my son, less than \$400 to me, and \$217 to him; as is more fully stated in my report to the Executive Committee, a part of which is published as an addendum to the financial statement.

For this, however, the Executive Committee is in no degree responsible. The canvass conducted by myself and others employed by me, was arranged with the President of the Society, and had commenced with considerable success before the meeting of the 10th of March, 1853, when the subject was first submitted to the Committee. They undoubtedly wished and intended to make the compensation as liberal as they felt themselves justified in doing; it was entirely satisfactory to me, and I have neither desired nor would have received more. The President himself had offered in the first instance to guarantee a larger amount from his own purse.

The operations of my agency were conducted without instructions or control from any quarter; the various expenses incurred was my own voluntary act, and so directed as in my own judgment was best calculated to build up a great State Society. My motive for entering upon this agency was rather to render what service I could to a great cause, than to make money by it. I relied for a support upon other business in which I had previously engaged, and thought it would be in my power to render this service also without detriment to my private interests. The pecuniary result was, as before stated, and without going further into matters merely personal to myself and my son, I only wish to state the fact.

WM. H. RICHARDSON.

For the Southern Planter.

JOINT WORM—SUBSOILING AND MANURING.

A communication in the June number again recommends destroying wheat straw and stubble as a sure means of shortening the reign of that ever powerful enemy to the wheat crop, the joint worm. Under the above head I will venture a few suggestions which can do no injury to the crop if it does none to the joint worm. I believe the joint worm will have its day, and for all we know, it may be a very long day; but I think the fact that they are so numerous and increase so fast, is an indication

that they will have but a short reign. But be this as it may, no means has as yet been devised for their destruction. I now propose, instead of perplexing ourselves about them, that we farmers, one and all, get into a good humor and join at once in the race of irradiation.—Moisture, shade, &c., is said by some writers to shorten their lives; if that be so, let's prepare for them as early every spring as possible. This, I suggest, can be done by seeding the earliest varieties of wheat, which may be brought to maturity much earlier than it now is by early or summer fallowing, subsoiling, and a moderate use of superphosphate of lime, or guano, drilled in with the wheat at the time of seeding. I have observed this season a field of 40 acres of wheat, which is now estimated at 20 bushels per acre, which was plowed very early last season and seeded in Mediterranean wheat. This field is separated at one point by a narrow lane from a field that was very much injured last year, and is now in white, smooth wheat and cannot make one-fourth as much as it did last season, whereas the joint worm was scarcely perceptible in the 40 acre field last season, and the present crop is said to be better than the last. After seeding this (40 acres,) a 60 acre clover fallow, which was plowed after the stubble, was seeded in the same way with a drill, with the addition of 3 tons of guano, and the addition of $3\frac{1}{4}$ tons of plaster in December. The joint worm is more numerous in this field than I ever saw them, and much the larger portion will scarcely be worth cutting; it was bounded by a public road, by grass land and a corn field. I account for this difference from the fact that one was plowed early and seeded first—the other being regarded a good chance for 25 bushels per acre without the *guano* or *plaster*, was fallowed last and seeded late, and it being very dry, came up very late. A few months since I had a conversation with a gentleman residing in Washington City, who owns 450 acres of land in Scotland, which he had recently hired, and more recently visited. I asked him if they were annoyed in his country by *joint worm*? “Yes,” he replied, “with all sorts of worms.” I then asked, “what do you do to guard against them, or can you raise good crops of wheat?” “Yes,” was his reply, “our farmers make from 40 to 60 bushels per acre.” “Pray, how do they do it?” he replied, “they plow well, for every crop, about 7 or 8 inches deep, and fallow with a *subsoil plow*, about the same depth, which disturbs the soil on an average about 15 inches, and they manure heavily for every crop with phosphate of lime, bone dust, or any good manure they may

have.” I then asked him what land rented for; he replied, “that land was never tenanted out in that country for less than 19 years, and that no rent was paid the first year, but double rent was paid the last year, which was done to enable the tenant to purchase manures and put the land to clover and grass the first year; and that land rented at from \$15 to \$30 per acre, it mattered not whether it was kept exclusively for grazing or cropped. He also mentioned that many of the best farmers would not permit a sheep to come upon their land, because they regarded them as being the most injurious stock to grass, or clover, it being their habit to take the bud out of every plant in early spring they had access to, which if it did nothing more kept it back a month later. The joint worm, fly, &c., together with the droughts we are now-a-days liable to, will, I think, force us to reflect upon the course we have been and are yet pursuing, and also to enquire into the manner of preparation, &c., in those wheat growing countries that outstrip us so far in the growing of that most beautiful of all crops. I have been unable to account for the want of success on the part of those few farmers in Virginia who have attempted to subsoil their land, but am inclined to think that it must be for the want of an effective and reliable *subsoil plow*.

Since the joint worm has become so bad, many farmers who do not feed it to cattle keep their straw over one year and then spread it very thinly over the young clover, which improves the clover and the land too, by the time it comes to be a fallow. I have long wanted to subsoil for corn, but could never find the time, (as I thought,) but the last spring, I resolved to subsoil 25 acres, and actually subsoiled 60 or 65 acres out of 100 I put in corn, and had it planted by the 2nd of May. I intend to subsoil a portion of my fallow for wheat, and I request all who can to do likewise every spring and fall, until we Virginians can, in some degree, rival the smaller yields of *Scotland*, whose soil is not to be compared to the average soil of Virginia. We have the soil and the climate, and we have a number of good farmers who have labor without paying hire, and we have the means (or the credit) to purchase manure; then why not raise better crops despite of the joint worm?

I. I. HITE.

WHITE POST P. O., CLARKE CO., VA.,
June 18th, 1855.

To broil hams properly, the slices should be first soaked in hot water, dried in a cloth, and broiled on a gridiron over a clear fire.

RICHMOND MARKETS, JUNE 28, 1855.

APPLES—Va. \$5 per bbl. none in market.
 BACON—City cured, none in market; Western Sides (new) held at 11c., new Shoulders, 10a10½c., Hams, 10½a12 c., Smithfield hog round, 11½c. Queen City Hams, 13½.
 BUTTER—Mountain 24 to 25 cts., Roll 20 to 25 cts., do Goshen 25a28 cts., old and inferior, 5a10½ cts.
 BEESWAX—25½a26½ per lb.
 COTTON—12½ cts. per lb.
 COTTON YARNS—17a18 cts., cash. Cotton Cordage 20 cts., per lb.
 CORN—We quote 105a110 cts., per bushel.
 CORN MEAL—\$1 30a1 35.
 COFFEE—Rio 10½a11½ cts., Laguyra 11½ c., Java 15½ c., Mocha 15½c.
 FLOUR—We quote country superfine at \$11a11½ extra \$11½, family \$12a12½. Stock very light and very little arriving.
 FLAXSEED—We quote at \$1 62½ per bushel.
 FEATHERS—Live geese 40 cts. per lb.
 FISH—Herrings, No. C, clipped, none in first hands; Halifax, clipped, No. 1, \$5½; No. 2, \$5. Shad—Last sales \$9; Mackerel, No. 1, \$21 per bbl., No. 2, \$12 50, No. 3, small, \$4 50a5, No. 4, \$4 50a5, medium 5 50a6, large 9 25 a9 50.
 GINSENG—25 cts., per lb.
 GRASS SEEDS—Clover \$6 75a7 per bushel, Timothy \$4a4 25, Herds' Grass \$1 25a1 50 per bushel.
 GUANO—We quote \$50 from wharf, \$50 50 delivered, for Peruvian, Mexican Guano \$30a35.
 GUNPOWDER—Dupont's and Hazard's Sporting, F, FF, and FFF, \$4½, Blasting, \$2, 75a\$3 per keg.
 HOOP POLES—We quote at \$7 per thousand.
 HIDES—Slaughtered 6½ cents per lb., green weight; calf skins, green, \$1. No Spanish Hides in market.
 HAY—Sales from store \$1 50.
 IRON AND NAILS—Pig Iron, \$32a\$40, Swedes \$107 50, English refined and Tredegar \$95, Common English \$80, American country \$85. Cut Nails 4a4½c.
 LIQUORS—Brandy, Otard, Dupuy & Co. \$3a5 per gal; A. Seignette, \$2 25a\$4; Sazerac, \$3 25a \$4 50; Hennessy, \$3 95a\$5; Peach, scarce at \$1 25a\$2; Virginia Apple, 60c. a85c.; do. old, 75c. a\$1 50; Northern do, 55a75c.; Imitation, 45a47½c. Rum, New England, 45c. Gin, Holland, \$1, 20a \$1 75; American 45 cts.
 LEAD—Pig 6a7½c., cash and time.
 LARD—Prime Lard, in bbls. 12c., scarce, in kegs, 12a13½, in pails, 14c.
 LEATHER—Good stamp 20a22c., per lb., damaged 18c., poor 16a17c., upper leather \$1 50a\$3, as in size, weight and quality, the latter price only for superior heavy sides. Skirting and harness Leather is more plenty with less demand. We quote 20 to 29c., as extremes, principally sales 22a26c.
 LIME—\$1 37 in store, \$1 31½ from vessel.
 MOLASSES—New Orleans 32a35c. per gallon. Cuba, 28. Porto Rico, 35.
 OATS—Stock very light—sales at 70a75cts. per bush.
 OFFAL—Bran, 25c. per bushel; shorts, 32½c; brown stuff, 45c. shipstuff, 75c.
 POTATOES—No demand for old and nothing doing.
 PLASTER—Ground \$9 per ton, calcined \$25 0 per bbl.
 RYE—\$1 30 per bushel.
 RICE—New 7½ cts. per pound.
 SALT—Liverpool fine \$1 60 per sack from wharf.
 SUGARS—Fair to strictly prime New Orleans 5½a7 cts., Coffee Sugar 7a8½, refined loaf 9½a10½, crushed and powdered 9a9½c.
 SHOT—7a7½ cts. per lb.
 TEAS—Imperial and Gunpowder 55c. a\$1 20.
 TOBACCO—The breaks of Tobacco are very much crowded at this time and receipts large. We quote inferior lugs at \$5 5a6; good and fine, \$6 25a7; inferior leaf, \$2 9; good, \$3 50a10 50; fine shipping, \$12 60a15; fine manufacturing, \$15a25.
 WHEAT—Two or three limited contracts for the new crop have been made recently (we believe for July delivery) at \$2 per bushel; but this, we suppose, cannot be regarded as an indication of the prevailing rates when the new wheat begins to come in.

WINES—Port, Burgundy, \$1a2, 50, Port Juice \$2, 50a 4, Madeira, Sicily, 45a\$1, 75, old Madeira, \$2, 50a4, Sherry, Permartin, Duff Gordon and Amontillado, \$2a6, 50.
 WOOD—Oak \$3 50 per cord, \$2a2 25 for Pine, retail \$4 50 for Oak, \$3a3 25 for Pine.
 WOOL—Small parcels of tub-washed sold at 27c; Unwashed 18a19c. No sales of firm fleece made as yet.
 BEEF—3 50a4, 50, per cwt. gross, which is \$9a7 net.
 HOGS—\$7½ per hundred, supply moderate.
 SHEEP—Mutton sells for \$3a5 a piece for ordinary and superior Sheep. Lambs \$2 a 3 50 each.

PAYMENTS TO THE SOUTHERN PLANTER,

To the 27th of June, 1855.

All persons who have made payments early enough to be entered, and whose names do not appear in the following receipt list, are requested to give immediate notice of the omission, in order that the correction may be made in the next issue:

Rev. W. Timberlake to January 1856	\$1 00
J. McMullen to September 1855	1 00
Dr. R. H. Nelson to January 1856	1 00
John Tyler to January 1856	1 00
N. Edmonds to January 1856	1 00
Jno. T. Bland to January 1859	5 00
J. J. Hite to January 1857	1 00
H. Hudgins to January 1856	1 00
S. B. Spratley to January 1856	1 00
W. H. Hughart to January 1856	1 00
Gen. H. B. Woolhouse to January 1856	1 00
H. F. Woolhouse to January 1856	1 00
N. B. Richardson to January 1856	1 00
Ro. H. Vest to January 1856	1 00
Dr. D. S. Green to September 1855	1 00
Capt. H. Jones to January 1857	2 00
Dr. W. S. Morton to May 1857	1 00
F. Grayson to January 1856	1 00
W. W. Alvis to January 1856	1 00
Jas. C. Cook to April 1856	1 00
H. G. Argulete to January 1856	1 00
Morgan Wood to January 1855	2 00
J. D. Massenburg to January 1856	1 00
H. B. Counsel to January 1856	1 00
Ed. Walden to January 1855	1 00
B. G. Harris to January 1856	1 00
Capt. C. Lowndes to January 1856	1 00
Geo. Taylor to January 1856	1 00
Col. B. P. Walker to January 1856	1 00
Bev. Hutcheson to June 1856	1 00
Jas. F. Harper to May 1856	1 00
Dr. W. R. Holt to January 1856	1 00
W. A. Kearney to April 1855	2 00
W. Fretwell to April 1856	1 00
Dr. W. Selden to January 1856	2 00
B. F. Tardy to June 1856	1 00
W. W. Harris to January 1856	1 00
J. R. Gates to January 1857	2 00
Samuel A. Darden to June 1856	2 00
W. Wheeler to January 1856	1 00
O. Moore to January 1856	1 00
J. Matthews to January 1856	1 00
S. D. Fisher to July 1855	1 00
W. M. Hannah to January 1857	1 00
Geo. E. Welsh to January 1856	1 00
J. A. Montague to January 1856	1 00
A. J. Bracey to January 1856	1 00
W. Cullingsworth, Jr. to January 1856	4 50
C. H. K. Taylor to January 1856	2 00
Ed. Towns to January 1856	1 00
Jos. W. Campbell to July 1855	3 00
J. F. Sampson to July 1856	1 00
A. Foster to October 1856	1 00
W. Wooten to June 1856	1 00

N. Matthews to June 1856	1 00
Warner Lewis to January 1856	3 00
Jas. Hite to July 1855	1 25
Dr. C. W. Wormley to January 1856	2 00
Geo. T. Thomas to September 1855	2 00
Jno. H. Barksdale to January 1856	1 00
Wm. Applebury, Jr. to January 1856	1 00
J. T. T. Hundley to January 1856	1 00
Jas. Rangeley, Jr.	1 00
W. A. Love to May 1856	1 00
B. Winston to June 1856	1 00
B. V. Iverson to January 1856	1 00
E. D. Brown to January 1856	1 00
Geo. M. Carter to January 1856	1 00
Estate Benj. Brown to July 1855	1 75
H. A. Watkins to January 1856	1 00
Dr. H. T. Minor to January 1856	1 00
J. R. Pulliam to April 1856	1 00
Richard Baylor to January 1856	1 00
E. F. Redd to May 1856	1 00
C. E. Redd to January 1856	1 00
C. Middleton to January 1856	1 00
J. Munsey to January 1856	1 00
Jos. A. Peck to January 1856	1 00
Dr. S. S. Griffin to January 1856	1 00
Col. Jos. Martin to January 1856	1 00
P. B. Sledge to January 1856	1 00
E. M. Anderson to January 1856	1 00
F. Lecler to January 1856	1 00
Wm. Leith to July 1856	1 00
Geo. L. Aiken to January 1857	1 00
Jno. B. Downman to January 1856	1 00
Daniel Hatcher to January 1856	1 00
A. Cheatham, Jr. to July 1855	1 00
W. A. Turpin to January 1856	1 00
Jno. S. Adams to January 1856	1 00
Ro. Wilson to July 1856	1 00
W. C. White to January 1856	2 00
Dr. W. A. Wilkinson to June 1857	5 00
S. H. Williams to January 1856	1 00
Jos. Turner to January 1855	1 00
W. A. Robertson, collections Nottoway, names not yet returned.	60 00

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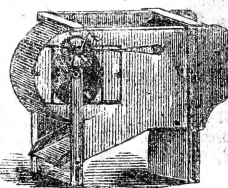
General Agent for sale of lands, &c.,

y—4t Southern Planter Office, Richmond Va.

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